

Co-teaching/Co-education in Greek secondary mainstream classrooms-
From the perspective of co-teachers and children with special educational needs

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Abstract

Co-teaching as an inclusive educational model is a new approach in Greece which aims to support the inclusion of children with special educational needs (SEN) in mainstream schools. This research aimed to investigate and evaluate co-teaching practices as well as teachers' and students' with SEN perceptions with regard to co-teaching. This research adopted a mixed methodology in two independent phases in order to address the needs of the study. Namely, 140 teachers were surveyed and multiple case studies of five different secondary co-taught classrooms were incorporated.

This study showed that the way co-teaching is implemented in Greek secondary schools is closer to the model of "one teach-one assist". Specifically, co-teachers saw the general teacher as responsible for all children, while the special teacher as responsible for an individual child with SEN included in a mainstream classroom. Thus, limited special teacher role expansion to all children was observed. The study showed that the general teachers were more negative about the sharing of various classroom responsibilities compared to the special teachers. Moreover, the approach of children's withdrawal out of class was implemented to a significant extent. According to the research findings it was largely the special teachers who preferred this integrated approach and not the general teachers. Also, limited differentiation and grouping methods were used by co-teachers. In addition, this study indicated that co-teaching pairs did not collaborate with each other in an extensive way and did not commonly plan lessons together. Thus, teacher participants were quite sceptical in relation to the potential personal benefits of co-teaching to themselves. This study showed teacher training in co-teaching, teachers' sensitivity and positive attitudes towards children with SEN, collaboration between co-teachers and mutual planning time, clear and official allocation of co-teaching roles and special teachers employment at the beginning of the academic year were all regarded as factors which would facilitate the successful implementation of co-teaching.

Interestingly, the present study revealed that from the perspectives of both teachers and children with SEN the model of "one teach-one assist" seemed to have positive academic outcomes to children with SEN. However, the model of "one teach-one assist" seemed to have not only positive but also negative social and personal outcomes for children with SEN. From the perspective of some teachers and children with SEN respondents it seems that the model of "one teach-one assist" limited the social interactions of some children with SEN and interrelationships with the remaining children, which was due to sitting next to them during the lesson time and escorting them during the break time. Moreover, children with SEN did not see that co-teaching resulted in their social skills development. As a result some children with SEN expressed their unwillingness to be supported by a special teacher during the following academic year. Among the various disadvantages of co-teaching that children with SEN mentioned was the confusion that they usually felt when both teachers were speaking simultaneously. Lastly, children with SEN who experienced the out of class support expressed their preference for being supported out of the mainstream classroom. This was because they saw that the out of class support benefited them academically.

Keywords: co-teaching, implementation, perceptions, co-teachers, children with SEN

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1. Introduction

The focus of this thesis is the implementation of co-teaching as an inclusive educational model in Greece and teachers' and students' with special educational needs perceptions of this model

The demand for more democratic schools, where the principles of equality and acceptance of diversity will be ascendant in the whole educational process and school ethos, has been promoted and stressed by many academics and educators (Christoforakis, 2005; Zoniou-Sideri 2005; Polichronopoulou, 2003; Booth 1999) as well as by a number of papers issued by international organizations and bodies (European Union, UNESCO) in which the notions of inclusion and inclusive education have been emerged. These notions, which were introduced in the Salamanca Statement (UNESCO, 1994) refer to the principle of "Education for All". More specifically, it can be affirmed that "the *inclusion* movement has arisen out of the philosophy that advocates the provision of equal learning opportunities to disabled children, helping them to be socialised within a community and therefore one that advocates that all children, whether disabled or not, should be educated in mainstream schools" (Xanthopoulou, 2011, p. 5). According to this declaration, *inclusion* is interpreted as *education* that includes all taking into account the needs and diversity of all (Booth & Ainscow, 2002). Additionally, the concept refers to the reconstruction of ordinary schools (curriculum, ethos, type of provided support) in order to meet the needs of all children, whilst avoiding the segregation of children and their placement in other special settings (Giangreco et al., 2010; Zoniou-Sideri, 2005).

Inclusion, due to its complexity as a process, often gives rise to practical difficulties in its actual implementation, even in countries which are "deeply committed to inclusive schooling" (Avramidis and Kalyva, 2007, p. 368), resulting in different variations of inclusive educational practices worldwide. This is especially the case in Greece where policymakers are taking significant steps towards promoting more inclusive educational practices various practical difficulties have emerged. These difficulties revealed the need to investigate practices or improve the current teaching approaches aimed at promoting the successful inclusion of children with SEN in mainstream classroom. Inclusive education in Greece, although based on the acceptance that all children – regardless of whether they are disabled or not – should be included in mainstream schools, is mainly connected with practices that are closer to the *integration* process and the medical model of disability (Zoniou-Sideri, 2005). In the light of this consideration, in Greece – where traditionally *resource units* or *integration classes* are operated within mainstream schools – a new inclusive model has been implemented in the last decade. Namely, the approach of *co-teaching* or *co-education* is implemented which reflects a movement to promote more inclusive practices within mainstream classrooms.

Co-teaching is defined as the collaboration between a general and a special educational teacher with an aim to provide effective instruction to children with various learning needs, including children who are identified as having special educational needs, in a mainstream classroom (Friend et al., 2010). The aim of this instructional approach is to support the learning of children who are identified as having special educational needs or physical disabilities as well as to promote their *inclusion* in mainstream schools. The underlying rationale of this inclusive model is that children who are identified as having special educational needs could have access to a mainstream classroom while at the same time they could be favoured by specialist support and instruction – necessary to reinforce their learning – within mainstream classrooms (Friend et al., 2010). Furthermore, what is stressed in the relevant literature (Harbort, et al., 2007; Masropieri et al., 2005) is the potential professional development of teachers involved in this approach as well as the potential academic and social benefits for all children within a co-teaching classroom, which thus sets this strategy as a very promising inclusive model. Hence, the suggested research proposal is focused on investigating the Co-teaching or Co-education approach that is implemented in Greece, aiming to collect data which could be useful for policymakers and teachers involved in this instructional approach, having as an ambition to positively contribute to the knowledge of how pupils could be effectively included in mainstream schools.

1.1 Research objectives and research questions

This research had a dual aim and objective:

- 1) To investigate and evaluate co-teaching practices
- 2) To investigate teachers' and students' perceptions with regard to co-teaching.

Thus, this objective will be addressed by employing a particular methodology (mixed-design methodology) to answer the following research questions investigating in parallel the aspect of the Greek educational policy of co-teaching:

1. How is co-teaching implemented in secondary education classrooms and why?
2. What are teachers' and students' perceptions with regard to co-teaching?

1.2 Rationale: Reasons why the suggested research project is important

At the Greek level

How co-teaching is implemented

While in U.S. schools the inclusion teaching method of *co-teaching* is used more frequently than any other inclusion model (Weiss & Lloyd, 2002), in Greece this model is a quite recent introduction into educational programmes. Co-teaching was established in 2008 with the Government law with regards to special education (Law 3699/2008) and since then it has been practically implemented in primary and secondary education schools. As a follow-up, it would be interesting to investigate how it is implemented by the teachers involved, what roles they undertake within this instructional approach as well as the teachers' and children's perceptions regarding this model.

Another argument relevant to this research has to do with the practical implementation of this teaching method and inclusion model in Greece, in which many problems have been encountered (see details on p. 27). These problems have to do with the weakness of the Greek policy in determining clear and discrete criteria in terms of identifying which children can be favoured by this support service delivery therefore causing various misunderstandings (see details on p. 27). Furthermore, according to Mosxos et al., (2009) co-teaching usually starts to be provided to children in the middle of the academic year and frequently is not provided at all to some disabled children. Added to this, based on the same report, various practical dysfunctions are noted such as provision of support on a partial basis (limited hours per day) withdrawal of children with SEN in a separate room and implementation by a general education teacher (instead of a special education teacher) without having any specialism or relevant experience. In response to the findings of this report, it would be interesting to investigate the opinions of teachers and children who have been involved in this approach.

Furthermore, the statistical reports regarding children with special educational needs in Greece illustrate the need to provide more effective support services that enable more effective inclusion in mainstream schools. Specifically, according to the reports of the European Agency for Development in Special Educational Needs, (2010-2012) the majority of children with SEN (75%) are included or integrated in general schools. Furthermore, from the year 2010 to 2012 the percentage of children with special educational needs has increased over 20%, reflecting the need to evaluate the support services available to enhance the children's learning support. One of the inclusion support services is *co-teaching*, and hence, the focus in this study.

From a financial point of view, co-teaching is a costly approach in the education budget (see details on p. 23). It should be noted that in Greece one general education teacher is hired to teach 20-25 children approximately, while one special teacher is hired to undertake the role of co-teacher within a mainstream class where approximately 1-3 children with special educational needs are included. When it is decided that children with SEN could participate in an *integration class* in a mainstream school instead of allocating a special teacher in a mainstream classroom,

it could be argued that this instructional method is an expensive inclusion method. The data from this study could positively contribute to the reconstruction or improvement of this teaching approach to ensure that its value is recognised.

Perceptions regarding co-teaching

In the literature, several factors are mentioned as having an essential impact on promoting successful inclusive educational practices. Among the most important of these is considered to be teachers' perceptions towards inclusive models, because these attitudes assist or limit the implementation of inclusion (Avramidis & Kalyva, 2007). Hence, it would be interesting to investigate teachers' and children's perceptions as they are the main consumers of this teaching approach. Furthermore, as it is stressed within literature (Friend et al., 2010), this teaching method is considered to be beneficial to teachers by affording opportunities for their professional and personal development. This inclusion method is also connected with social and academic benefits for disabled children or has as basic ambition to support children's academic and social performance, especially those identified as having special educational needs (Friend et al., 2010). The above arguments reflect the significance of investigating the co-teaching approach in the Greek educational context from teachers' and children's with SEN perspective.

Within the Greek literature there is a paucity of studies that have investigated this teaching approach. However, one paper has been published relatively recently (see Strogilos & Tragoulia, 2013), alongside a limited number of theses and dissertation papers (see Kabanellou, 2009; Arnidou, 2008). All three studies were focused on primary education. This limited research background explains the rationale for investigating how co-teaching is implemented in Greek secondary schools. It is hoped that the findings will play a role in the possible reconstruction and improvement of this support service delivery.

At international level

Co-teaching is traditionally used in the USA and is the most common inclusive model. Having emerged in the USA in the 1960s, 1970 the legislation helped the advancement and the establishment of co-teaching (Friend et al., 2010; Thousand et al., 2006; Weiss & Lloyd 2002). However, in Europe the allocation of a support teacher within mainstream school aiming to support the inclusion of disabled students has been introduced in relevant legislations across countries in the decades of 2000 and 2010 and it is implemented in few countries such as Italy, Ireland, Spain, Turkey and Greece. Specifically, in Italy the employment of support teachers within a mainstream classroom was introduced in 1992 with the Law 104/92 (Devecchi et al., 2012) and similarly in Spain in 1990 with the Law for the Organization of the Educational System (Arnaiz & Castejon, 2001), accordingly. In Ireland, co-teaching was specially recommended as an inclusive model in 2005 with the law Circular 02/05 by the Department of Education and Science (European Agency for Development in Special Educational Needs, 2010-2012). Thus, *co-teaching* is becoming more widespread and the research interest around

this instructional model has dramatically increased, resulting in the growing significance of this research.

Another reason which sets this research as important has to do with the nature of this inclusion model. Specifically, the philosophy that lies behind this model is guided by the basic principles of inclusion. According to these principles *inclusion* is referred to as the reconstruction of ordinary schools (curriculum, ethos, type of provided support) in order to meet to the needs of all children avoiding the segregation of children and their placement in other special settings (Giangreco et al., 2010; Zoniou-Sideri, 2005). Thus, it could be stressed that it is a very promising inclusion model and investigation regarding the outcomes of this method are highly valuable and worthwhile.

Also, in every country and in different educational frameworks, different models of *co-teaching* are implemented according to teachers' perceptions and understandings of their roles and responsibilities and to the specific educational policy adopted by each country (Friend et al., 2010; Thousand, et al., 2006). Hence it would be interesting to investigate what type of co-teaching is applied in Greece and how co-teachers' justify their practices with regard to their role understanding. Also, investigating the teacher's and students' perceptions of co-teaching aiming to make comparisons with the findings of relevant international studies would shed new light on its success and challenges in practice. Also, teachers' and students' perceived outcomes of co-teaching on children with SEN in relation to the specific model/s of co-teaching that are applied, will provide findings which can be correlated with other international co-teaching practices and research findings.

Lastly, this is significant research because the findings will positively contribute to the current knowledge and understandings about inclusive practices and can fill the gaps in international knowledge with regard to a co-teaching inclusive model. Reiteratively, what has been widely stressed within the literature is the need for more co-teaching research (Friend et al., 2010; Murawski, 2006; Murawski & Swanson, 2001).

1.3 Contributions to Knowledge that the research will address

At a Greek level

In the limited number of studies have been conducted in Greece regarding *co-teaching* approach, it is rightly suggested that further research is needed in this field. Specifically, as Kabanellou (2009) notes further research is needed aiming to investigate the factors that influence co-teaching. Also, Strogilos and Tragoulia (2013) stressed the need to investigate the roles of teachers involved in various approaches of co-teaching and how co-teachers provide help to children within mainstream classrooms.

Also, a limited number of studies have focused on special teachers' roles within Greek mainstream schools. It is worth mentioning that these studies are focused on the roles of special teachers within *integration units* and none of them on special teachers' roles within the instructional approach of co-teaching. These kinds of studies are considered very important because as Boutskou (2007) stresses, the roles/tasks of special teachers in mainstream schools are not defined clearly by law and; as a result, misunderstandings can arise.

At an international level

Implementation of co-teaching and co-teacher's roles

Contrary to Greece, U.S. includes a large amount of research which investigated the instructional approach of co-teaching. However, at national and school level there are differences in terms of the models of co-teaching that are implemented and how teachers put into practice the co-teaching instructional approach (Hantziadimantis, 2011), reflecting the variety of models that co-teaching could adopt in educational practice. To be more specific, Friend et al., (2010); Thousand et al., (2006); Weiss and Lloyd (2002) refer to six approaches in which teachers could deliver instruction: *Supportive teaching, Parallel teaching, Complementary teaching, Team-teaching, One teach one assist and Alternative teaching* (see details on p.13). Furthermore, Hang and Rabren (2009) stressed that there is a need to investigate what forms the *co-teaching* approach could adopt in order to determine any differences in practice and effectiveness. Hence, it would be interesting to examine what model/s of co-teaching is implemented in Greece.

Added to this, what is stressed within the literature (Masropieri, et al., 2005; Murawski & Swanson, 2001) is that few studies have been focused on the *actions* of teachers and especially on special teachers within a co-teaching approach. Specifically, Mastropieri et al (2005) stressed that there is little research data investigating what co-teachers actually do within co-teaching classrooms. Furthermore, it has been stressed in the literature that in terms of co-teaching research it necessary to examine how this instructional model is implemented aiming to determine and ensure '*treatment integrity*' (Hang and Rabren, 2009; Murawski, 2006; Murawski & Swanson, 2001) (see crarification of the term on p. 40-41). Similarly, as Murawski (2006) notes, the term co-teaching is vague or not so clearly defined, despite the fact that there are several explanations of the term in the literature.

It should be noted that conceptions of "what actually co-teaching is" are connected with the way co-teachers implement co-teaching, namely their roles and responsibilities that a general and a special co-teacher undertake. However, in different social frameworks at international, national and local level, there are differences in terms of the special teacher's role within mainstream classrooms (Vlachou, 2006; Simeonidou, 2002) which poses obstacles to a clear understanding and definition of their tasks and roles. Added to this, there is a dearth of studies focusing on the role of a support/special teacher within mainstream classroom (see Vlachou, 2006; Weiss and Lloyd, 2002; Forlin, 2000) and consequently a there is lack of findings regarding this issue. In terms of co-teaching approaches, the investigation of co-teachers' roles is considered to be

significant because as Fennick and Liddy (2001, p. 230) explain, the explicit description of roles between co-teachers is considered to be essential for a successful co-teaching eliminating "role ambiguity".

Furthermore, co-teaching expressed the philosophy of facilitating children's access to general curricula and of providing them with enriched instructional experiences. Thus, it would be interesting to investigate teacher's actions in order to find out whether co-teaching includes a plethora of various teaching methods which – according to Murawski (2006) – result in children's academic skills development. Also, it would be interesting to investigate to what extent specialized instruction or "specially designed instruction" (Murawski, 2006, p. 226) can or actually take place within co-teaching classes in order to support the learning of children with SEN.

Justification of co-teachers' practices– teachers' perceptions of their roles

How co-teaching is implemented and what roles and responsibilities co-teachers undertake represent dimensions which are with teacher's perceptions and understandings within this inclusion model. Within the literature it is stressed that there is a small number of researchers who have investigated how teachers involved in co-teaching perceive and make sense of co-teaching and their roles. Hence, this issue has been highlighted as needing further research (Hantzidiamantis 2011; Hang and Rabren, 2009; Murawski & Swanson, 2001). Given that the way co-teaching is perceived by teachers influences their practice within the mainstream classroom, the importance of examining teachers' views in relation to how the co-teaching model is implemented cannot be underestimated.

Teachers' perceptions and factors influence co-teaching

Teachers' perceptions regarding collaborative and inclusion models are considered important because they influence and are directly linked with the quality of teachers' practice and the success or failure of co-teaching (Solis, et al., 2012; Avramidis & Kalyva 2007; Murawski & Swanson, 2001). As it is stressed within the literature, more empirical evidence is needed to reveal which co-teaching practices actually promote the successful or effective inclusion of children with SEN in the mainstream classroom. This points to the need to develop protocol which could evaluate the quality of co-teaching in order to improve co-teaching practices (Strogilos & Tragoulia, 2013; Simmons & Magiera, 2007; Murawski, 2006; Masropieri et al., 2005; Wilson, 2005). Thus, an investigation of the factors that influence co-teaching from the perspective of those who are mainly involved in its practical implication is considered to be an important contribution to this debate and to the disclosure of how *co-teaching* practices could be improved.

Academic and social outcomes of co-teaching

The lack of data and evidence regarding the social and academic outcomes of co-teaching to children in co-taught classrooms and the need to investigate this issue has been widely stressed within the literature (Hang & Rabren, 2009; Harbort et al., 2007; Murawski, 2006;

Austin, 2001; Murawski & Swason 2001; Budah, et al, 1997). Added to this, the mixed results that have been found in various studies in terms of the social and academic outcomes of co-teaching indicate the need for additional research in this field. Lastly, it is worth mentioning from a more general perspective that while inclusion is the focus of many educational policies worldwide, as Lindsay et al. (2005) state, there is lack of data in the literature regarding the effect of the various inclusion models for children.

Children's perceptions

As stressed in the literature (Vlachou et al., 2006; Gerber and Popp, 1999), few of the co-teaching studies have been focused on children's point of view regarding inclusion models and especially on children's perspective in terms of co-teaching model. Furthermore, findings are not only limited but can also be contradictory. Indicatively, McDuffie et al. (2007) found that in general terms children have favourable views about co-teaching. However, Wilson and Michaels (2006) and Jang (2006), found that children saw co-teaching as having various drawbacks with the most dominant related to the different teaching approaches that were used by co-teachers in the classroom.

1.4 Personal statement as to the value of conducting this research

The primary reason for conducting a research relevant to inclusive education is that I am very sensitive towards people with special needs and disabilities. The way societies treat and consider children with or without disabilities and educate them is usually indicative of their growth. The changes in education as well as in attitudes towards students with disabilities are not mainly associated with the students' special educational needs/disability but with social, political, economic, legislative and religious factors. As Clough and Lindsay (1991) explain, the way in which children with or without special needs are supported within school in an attempt to enhance their learning is considered to be an essential issue, because it is linked directly with the status of the school and the type of provision that a school and a state adopts. Thus, I am interested in investigating how children with SEN could be better supported.

Furthermore, the profession of teaching children with special educational needs that I follow significantly contributed to my decision to conduct a research in this field. Specifically, the last two years I have been working as a special education teacher. In particular, in the first year I worked as a special co-teacher in a mainstream secondary school and in the second year as a special teacher in a special secondary school. Thus, expanding further my knowledge in the field of teaching disabled children at a research level strengthen my expertise in improving my work as a special teacher to be successful with various teaching endeavours.

Lastly, conducting research relevant to inclusive education and specifically to co-teaching is considered to be highly valuable for the inclusive provision at a Greek and European level. This is because in the last few decades inclusive education of pupils identified as having special

educational needs (SEN) in mainstream schools has become a major educational issue in Europe and generally in the developed countries with an increasing interest being shown worldwide. Indeed inclusion is considered to offer essential benefits for typically developing and disabled pupils, enhancing their academic, personal and social development (Christoforakis, 2005). For this reason, inclusion of pupils with SEN in mainstream schools is considered a key objective of educational policies and is included in the relevant education legislation. As a result, a large number of children with SEN are included in mainstream schools. This challenge demands the reforming and reconstruction of schools and presents the need for teaching methods which could enhance the efficient support and inclusion of children with special educational needs in mainstream schools. Hence, applying my knowledge at a research level and conducting research relevant inclusive education field represents an opportunity to contribute to the knowledge base regarding children with special educational needs (SEN) and their inclusion in mainstream schools.

In the light of the above considerations, it would be very interesting for the current research proposal to be focused on the collection of data in terms of a new teaching approach and inclusive model that is implied in Greece, namely both of the co-teaching or co-education. This research has as an ambition to provide data that is useful and significant for teachers, children as well as policy makers, aiming to positively contribute to the knowledge of how pupils could be effectively included in Greek mainstream schools. It is hoped that the results illustrate the Greek educational reality in terms of the implications of *co-teaching* and generally the inclusive educational practices, which could be linked with relevant international studies.

2. Literature Review

2.1 Conceptualization and definitions of co-teaching

The large number of children with special educational needs (SEN) included in mainstream schools poses a considerable challenge to schools which attempt to respond to the different needs of children. As a consequence, new and more efficient teaching methods are being explored, aiming for the effective inclusion of children with SEN in mainstream schools. One of these teaching methods is *co-teaching*.

Co-teaching is a particularly vague term, so clearly and explicitly of what co-teaching is, seems to be challenging. This is because there are many types of co-teaching and this term could be used in different frameworks, in various occasions and for various purposes. Specifically, at an international level co-teaching is implemented for the purpose of the instruction of students who learn a second or foreign language or are educated or included in a school environment where their mother language is not the dominant language within this environment. Furthermore, co-teaching is applied for the purpose of teaching *gifted or talented children* in a general mainstream school (Friend et al., 2010). Also, it is not unusual to meet this instructional model within a university environment for the purpose of the better instruction of university students or as an alternative teaching model for teaching school students (Friend et al., 2010).

Generally speaking, co-teaching “reflects the way in which more than one teacher share the responsibility of conducting a lesson aiming to expand the learning opportunities to students within one classroom” (Murphy et al., 2009, p. 465). However, within the relevant literature there is a strong agreement of what co-teaching is not. To be more specific co-teaching, is not a simple placement of two adults in a classroom — for example two or more paraprofessionals, volunteers, or pre-service teachers — even if within the pair one person is a teacher (Friend et al., 2010).

Within the inclusive educational framework, at an international level as well as at a Greek level, particularly, co-teaching is considered to be an instructional model which is implemented by one general education teacher and one special education teacher, within a mainstream primary or secondary school classroom where one or more children with special educational needs are included (Thousand et al., 2006).

In terms of defining co-teaching a plethora of definitions exist within the relevant literature and every definition refers or stresses different components of co-teaching. Particularly, definitions refer to:

Simple placement of two teachers in a general education setting/classroom

There are a number of definitions that refer to a *simple placement* of two teachers (one special and one general) within one mainstream classroom. Indicatively, Weiss and Lloyd (2002, p. 58) mention that “co-teaching implies both the general and special teacher are teaching at the same time, the same lesson, to a group of pupils with various and diverse needs”.

Sharing of responsibilities between teachers: planning and delivering instruction

Some definitions go beyond the simplistic placement of two teachers but stress the importance of teachers sharing the responsibility of planning and delivery of the instruction as an important component of co-teaching. Indicatively, Fennick and Liddy (2001, p. 1), describe co-teaching as the “partnering” of a general teacher and a special teacher or another specialist (special service provider) in order to teach children with and without special educational needs who are educated within a mainstream classroom aiming to address pupils’ various needs. In addition, Fennick and Liddy (2001, p. 1) stress that “planning and delivery instruction” as well assessing students are included in both teachers’ responsibilities. This shared approach is highlighted to an even greater extent by Sileo, (2011, p. 14), who proposes that co-teachers are involved equally in teaching process as well as sharing the responsibility of “planning, delivering and evaluating instructional practices for all students” within classroom.

Interchangeable roles between teachers (Instruction delivery)

Some attempts to define or conceptualise co-teaching focus on the way in which the instruction within this teaching model can be implemented presenting the various approaches in which teachers could deliver instruction, exchanging roles within one lesson. To be more specific, Thousand et al. (2006) and Weiss and Lloyd (2002) refer to the six approaches (*One teach-one assist, one teach-one observe. Parallel teaching, Team teaching, Alternative teaching, Station teaching*).

Collaboration between teachers

Attempts to conceptualize co-teaching have stressed the importance of active collaboration between teachers and harmonic relationships between them. Eloquently, Friend et al. (2010, p. 4) describes co-teaching as a “professional marriage” implying the necessity and importance of building harmonic relationships and collaboration between teachers involved in co-teaching, in every aspect of teaching process.

Outcomes of co-teaching

A further key dimension of this collaboration relates to the outcomes of co-teaching, for students and teachers, rather than merely to the characteristics of this teaching approach. Specifically, these outcomes focus on personal and professional development in terms of teachers, as well as on pupils’ opportunities to be favoured by a variety of different teaching styles or strategies. Indicatively, Jang (2006, p. 179) defines *co-teaching* by explaining that co-teachers “take collective responsibility for maximizing learning to teach or becoming better at teaching while providing enhanced opportunities for their students to learn”.

The above conceptualizations illustrate that differing perspectives exist when defining co-teaching. There is a plethora of different terminology and various teaching practices that are used to describe co-teaching as an inclusion teaching approach. Furthermore, the fact that there are a number of terms that are used as synonyms of co-teaching contributes significantly to the ambiguity of the term itself. Specifically, the terms *cooperative teaching* and *team teaching* are used as synonyms of co-teaching. However, as Jang (2006) explains these terms have a similar but not completely interchangeable meaning. Jang goes on to explain that the term *team teaching* or *cooperative teaching* have a wide range of definitions and “the term may refer to (a) a simple allocation of responsibilities between two teachers, (b) team planning but with individual instruction or (c) cooperative planning, instruction and evaluation of learning experiences” (p. 179). However, as she adds, *co-teaching* goes further implying as a term the teaching approach which “involves two or more teachers whose primary concern is the sharing teaching experiences in the classroom and co-generative dialoguing with each other”, thereby the “intersubjectivity” – particularly the “exchange of ideas” between teachers – as the most important component and advantage of co-teaching (p. 179).

Aiming to provide an explanation, it could be said that the plethora of definitions may result in varying the practices implemented within a co-teaching approach. Indeed, the various challenges to teachers and education systems – as well as the lack of agreement in terms of roles and responsibilities of teachers – arising from this inclusion teaching approach may lead to a variety of definitions and conceptualizations across the developed countries in which this model is implemented.

Aiming to provide a concise definition of what co-teaching is it could be said that co-teaching includes all the above conceptualizations and that all the above programme characteristics and features are considered to be fundamental components of co-teaching. It could be argued that a definition which omits any of the above aspects is in danger of being characterized as over simplistic. As Buerck, (2010, p. 6) stressed, “for true co-teaching to occur, “both professionals must co-plan, co-instruct and co-assess a diverse group of students in the same general education classroom”.

2.2 Conceptualization and definitions of *co-teaching* within a Greek educational context

Searching for the conceptualization and definitions of the term *co-teaching* within the Greek literature, co-teaching is mainly defined by using the above or some of the above conceptualizations and paraphrasing or quoting definitions by U.S. or other researchers and authors. However, Immelou (2010) explains that this teaching method is a practical implication of the *consultation model*. Although in the USA the co-teaching approach has emerged as a “modality” under the big umbrella of the consultation model during its implementation (Kilanowski-Press et al., 2010), there is a clear distinction between these two terms in the relevant literature and particularly in U.S.-based literature. Specifically, as Weiss and Lloyd (2002, p. 58) mention, “co-teaching enables special teachers to provide direct educational support to general teachers and students” (i.e. organising and teaching lesson), while the “consultation model gives the special teacher the opportunity only to make suggestions” and to suggest modifications without providing direct educational support to teachers and students. Specifically, according to Thousand et al. (2006, p. 242), *consultative support* implies that one adult, usually special teacher meets frequently with a general teacher in order to see the learning progress of one or more children, to access their learning needs, to adapt the school material or the way of teaching and to solve a problem, if any. They further explain that co-teaching implies both the general and special teacher are teaching at the same time, the same lesson and are involved equally in teaching process sharing the responsibility of teaching few or all the children within classroom. Similarly, Friend et al., (2010) describes co-teaching as the cooperation of a general teacher and a special teacher or another specialist (special service provider) in order to teach children with and without special educational needs who are educated within a mainstream classroom aiming to address pupils’ various needs.

With regards to the terminology that is used for describing the co-teaching approach within the Greek educational context, it should be stressed that the most widely term used is “co-education/parallel support”. However, it is not unusual someone to meet within the Greek official policy and provision papers the actual term “co-teaching” translated into the Greek language in order to describe this inclusion model in Greece. On many occasions the exact English term “co-teaching” is used, which is similarly the case within Greek educational literature and research papers. Specifically, Greek researchers/academics use the term co-teaching in order to describe this inclusion model. They name this inclusion model as co-teaching describing also the various models, principles etc. of co-teaching (c.f. Strogilos & Tragoulia, 2013, as an example of this approach). Other researchers choose to use the combined term co-teaching/parallel support. For example, Kabanellou (2011) describes this inclusion model as co-teaching but in her literature review and survey questionnaire used the combined term co-teaching/parallel support.

2.3 Models of co-teaching

In the literature, many variations exist on how co-teachers could collaborate with each other or how they could provide support to children in the classrooms. The various models of co-teaching are mentioned below and can be further explained diagrammatically (see figure 1):

- 1) *One teach one assist*: This model is also known as *Supportive teaching* (see Thousand et al., 2006). In this model of co-teaching, one of the two teachers takes the teaching role while the other circulates among students in order to provide support. In some instances, the teacher who takes the assisting role may provide individual support to one student if necessary, while the other co-teacher continues with instruction.
- 2) *Parallel teaching*: Two or more teachers work with different groups of students in the same classroom. Some of the variations of this co-teaching model are the following: Each co-teacher is responsible for one group of children (split class), for two or more groups or centres (station teaching or learning centres). Also, the co-teachers could be rotated among two or more groups of students (co-teachers rotate) or rotate from one group to another group teaching different themes of the lesson (Immelou, 2010; Sileo & Garderen, 2010; Dieker, 2001).
- 3) *Alternative or Complementary teaching*: One co-teacher provides help to the other co-teacher in order to promote and to enhance his/her instruction for example by pre-teaching some necessary skills or by explaining some basic concepts of the lesson while the other co-teacher provides a lecture on the content (Strogilos & Stefanidis, 2015).
- 4) *Team-teaching*: The two co-teachers equally plan and teach a lesson as well as assessing the learning of all children and having the responsibility for all children. Usually, in this co-teaching model the division of the lessons depends upon expertise and interests of each co-teacher so that all students experience each teacher's strengths and expertise (Strogilos & Stefanidis, 2015).
- 5) *One teach one observe*: One teacher leads the instruction while the other observes the behaviour and academic performance of specific pupils (Strogilos & Stefanidis, 2015; Friend et al., 2010).
- 6) *Station teaching*: Children are separated into two or more groups or learning stations and teachers provide individual support and instruction at each of them (Friend et al., 2010; Weiss & Lloyd, 2002).

As Thousand et al. (2006, p. 243) explains “no one of the above co-teaching model is more superior to the others, but the choice and the decision of which model will be used depend on the learning targets and the learning needs of children” within classroom, aiming to enhance students' progress.

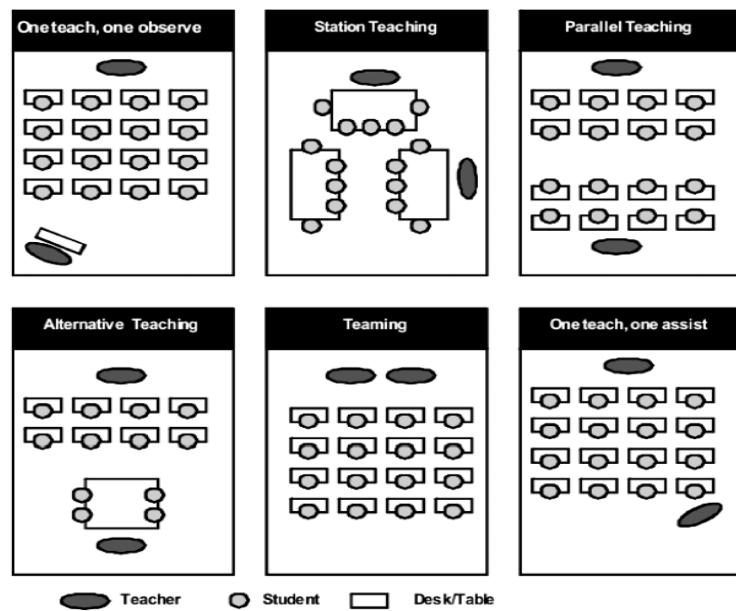


Figure 1. Figures have been taken from Friend et al. (2010, p.12)

2.4 A critical reflection on co-teaching approaches

A further or alternative analysis of the various models of co-teaching is necessary in order to make the co-teaching approach more explicit and comprehensible. Based on the literature about co-teaching (Conderman & Hedin, 2012; Sileo, 2011; Sileo & Gardener, 2010; Conderman, Johnston-Rodriguez & Hartman, 2009; Bauwens and Hourcade, 1997) the various models of co-teaching could be further analysed using three basic dimensions: 1) Phases of teaching, 2) Grouping of pupils, 3) Content of the lesson (see in detail in Appendix 1).

Specifically, the dimension “Phases of teaching” examined the six co-teaching models in relation to four stages of teaching process: 1) Planning, 2) Acting-Instruction and managing, 3) Reviewing-monitoring, 4) Reviewing-assessing. In particular, the above dimension examined the equal (or not) involvement of both co-teachers within the various phases of the teaching process. In detail, the “Planning” stage examined whether the planning of the lesson was common-joint between the co-teachers for each model of co-teaching. The “Acting-Instruction and managing” stage examined whether both co-teachers were involved in delivery instruction and classroom or/and behaviour management or not. Moreover, the stage “Reviewing-monitoring” checked whether or not both co-teachers were involved in monitoring pupils’ learning. Also, the stage “Reviewing-assessing” checked whether both co-teachers were equally involved in assessing pupils’ learning and evaluating the lesson process. Moreover, the “Grouping” dimension examined the way in which children are grouped in each co-teaching model. Lastly, the “Content” dimension analysed the content of the lesson in relation to both children’s grouping and the instructional approaches applied in each co-teaching model.

This further analysis of co-teaching approach was also depicted in a table, which illustrated the breakdown of the various models of co-teaching according to the above three dimensions (see in detail in Appendix 2). Based on this table, the common components among the various models of co-teaching are the mutual lesson planning and the mutual lesson and pupils’ assessment between co-teachers. Moreover, the co-teaching approach is mainly associated with the method of pupils’ grouping as the majority of co-teaching models use or are based on pupils’ grouping or teamwork activities. Thus, the various models of co-teaching can be seen by me as an ideal teaching approach or as a philosophy which is based on two components: the co-teachers’ collaboration in the various aspects of teaching process and the pupils’ grouping or team working. Therefore, this research sought to identify the above – or some of the above – components in order to recognise the co-teaching approach.

2.5 Greek reality and co-teaching

2.5.1 Co-teaching educational provision

The way societies treat and consider children and educate them is usually indicative of their growth (Zoniou-Sideri, 2005). The changes in education of students with disabilities are not only associated with the students' special educational needs but also with social, political, economic, religious and mainly legislative factors in different countries which determine who is educated, how and when trained (Labropoulou & Panteliadou, 2005). Also, these factors determine how different special education is from general education, who teaches in schools, how parents are involved in the process, what prospects and supplies are given to people with disabilities (Labropoulou & Panteliadou, 2005). Hence, the implementation of co-teaching in Greece is mainly influenced by legislative factors.

While in U.S. schools the inclusion teaching method of co-teaching is used more frequently than any other inclusion model (Weiss & Lloyd, 2002), in Greece this inclusion model was firstly introduced in 2000 (Law 2817/2000) with a Government law on special education. This law was a first step forward to more inclusive practices in Greece, because until then only integration classes or resource units operated within mainstream schools. Thus, the establishment of co-teaching gave the chance to children identified as having special educational needs to be educated within a mainstream classroom by providing to them a special education teacher in every teaching hour. Also within the more recent law in 2008 (Law 3699/2008), co-teaching is seen as a way of educating children within mainstream classrooms, which is evidence that special educational provision continues to emphasise this model.

The endeavour of policymakers to promote more inclusive practices in Greece is reflected through the financial budget of governments for this inclusive model, the actual costs that governments invest in favour of this teaching approach and the number of teachers that have been hired every academic year in order to undertake the role of co-teacher/support teacher.

In an attempt to illustrate this trend in Greece, the Ministry of Education provided me with financial data with regard to the practical implementation of co-teaching in Greece. As we see in Table 1 the financial budget for co-teaching has been considerably increased from 2011 to 2013. Specifically, the financial budget in 2013 has increased more than 50% compared to the budget in 2011.

Table 1. *Co-teaching*: Financial budget from 2011-2013 in all three areas of Greece.

Financial Budget Co-teaching Geographical areas 1, 2, 3			
1st decision (18/7/2011)			
Area 1	12757/18-07-2011		12.014.482,76 €
Area 2	12758/18-07-2011		21.862.419,44 €
Area 3	12759/18-07-2011		2.560.463,54 €
2nd decision (6/7/2012)			
Area 1	10803/6-07-2012		19.200.000,00 €
Area 2	10804/6-07-2012		34.900.000,00 €
Area 3	10802/6-07-2012		4.128.000,00 €
3rd decision (29/1/2013)			
Area 1	2323/29-01-2013		25.732.350,00€
Area 2	2324/29-01-2013		46.867.650,00 €
Area 3	2325/29-01-2013		4.378.000,00 €
4th decision (27/9/2014)			
Area 1	19833/27-9-2013		35.137.442,55 €
Area 2	19834/27-9-2013		49.776.192,31 €
Area 3	19835/27-9-2013		7.448.365,14 €
Sum			92.362.000,00 €

Note: Greece is separated into three main geographical areas for the purpose of a better control of educational issues (e.g. for the purpose of distribution of the financial budget and the allocation of teachers to schools)

Also, from a financial point of view it seems that the co-teaching model is a very costly teaching method. As we could see in Table 2 the period between Jan 2011 to March 2014, 52 million Euros have been spent for the provision of a co-teaching approach.

Table 2. *Co-teaching*: Actual costs from Jan 2011-March 2014

Actual costs: 01/01/2011-12/3/2014	
Area 1	17.886.176,41 Euros
Area 2	30.614.100,31 Euros
Area 3	3.665.507,85 Euros
sum	52.165.784,57 Euros

Furthermore, in the period of 2013-2014 the number of teachers that have been hired for the post of co-teaching has dramatically increased (see Table 3). Indeed, the number of teachers that have been hired from 2011 to 2014 has more than doubled. Given that Greece is facing a considerable economic crisis it is imperative to evaluate this model by providing research-based data so as to ascertain whether there is educative value in this approach.

Table 3. Number of teachers that have been hired for the post of co-teaching in the period of 2013-2014

Primary and secondary education teachers that have been hired for the post of co-teaching			
	2011-2012	2012-2013	2013-2014 2.106 people till March
Area 1	291	488	766
Area 2	600	912	1.156
Area 3	36	70	184
Sum	927	1470	2.106

2.5.2 Co-teaching and practical implementation

In Greece, particularly, co-teaching is implemented by one general education teacher and one special education teacher. A number of special teachers are hired every academic year by the Ministry of Education to undertake co-teaching (or parallel support) post. Also, this Ministry is responsible for the allocation of special teachers to mainstream schools across the country. The number of the hired teachers is dependent upon two factors: the children's special educational needs and their official assessment report by the diagnostic centre (KEDDY) and the parents' request for employing a special education teacher within their child's mainstream classroom aiming to support the child's learning and inclusion.

Therefore, in terms of the employment background there are differences between the special and general education teachers with regards to their respective employment backgrounds or situation. Specifically, the number of the special teachers that are hired to undertake the post of co-teacher is not the same every academic year. Moreover, it cannot be relied upon that the same special teacher would be allocated in the same co-taught classroom. This is because at the beginning of every academic year the special teachers are required to complete an application in which all the special teachers expressed their preferences in working as a special co-teacher and/or in an integration class as well as their preferences for being employed in specific area(s)/district(s). To draw a parallel, the employment status of the special teachers in Greece is similar to that of 'supply teachers' within the UK educational employment system. By contrast, the employment conditions of the general education teachers are completely different – as permanent teachers they do not need to apply for a job every academic year.

Moreover, differences exist between general and special education teachers in terms of their conditions of service. Specifically, the general education teachers remain in the same school and district/area every academic year. Furthermore, the general education teachers usually work with the same children as they taught in the previous academic year. Hence, they are familiar with their learning needs/difficulties. By contrast, the special education teachers are

hired in a different school and probably in a different area/district every academic year. As a result, they are unfamiliar with children's learning characteristics and particularly with children with SEN-specific learning needs. Moreover, the special teachers and particularly the secondary education ones need to participate in more than one co-taught classrooms on a weekly basis in order to support children with SEN included in mainstream classrooms, which may result in their professional burnout.

With regard to special education teachers' qualifications, there are differences between the special primary and secondary education teachers. For the primary education stage the special education teachers are likely to have completed undergraduate studies in special education at one of several Greek universities. However, due to the current lack of special or specialised teachers at the primary education stage, qualified primary education teachers have needed to develop their knowledge in terms of special education in order to work under the post of special co-teacher. Therefore, some universities across the country developed postgraduate studies such as Master's and PhD degrees in special education and a series of seminars in special education which lasts approximately six months. This specialism is available only to qualified teachers. Thus, many unemployed primary education teachers obtain a specialism, as indicated above, aiming to work as a special teacher. Indeed, due to the increased need for special education teachers in primary education, it is not unusual for the post of co-teacher to be covered by teachers without special education qualifications.

By contrast, there is currently no faculty within the Greek educational universities to provide undergraduate studies in special education for potential teachers in secondary education. Moreover, special education is not included in secondary education teachers' training preparation. Thus, secondary teachers could develop their knowledge by participating in short-term (less than a year) courses or seminars organised by the national Universities and teacher training institutes as well as attending long-term (more than a year) training courses which lead to postgraduate qualifications, such as Masters' and PhD degrees. Moreover, the secondary education teachers' knowledge development in special education is considered to be a necessary precondition in order for secondary education teacher to be employed in the post of special co-teacher.

Lastly, there are further differences between the general and special education teachers in terms of their respective conditions of service. Specifically, in terms of the primary education stage a qualified special education teacher is employed under the post of co-teaching on a full time basis for all curriculum areas. Thus, a special teacher at primary education stage usually collaborates with only one general teacher in a co-taught classroom. By contrast, at the secondary education stage, a general secondary education teacher with a special education specialism (as explained above) undertakes the post of co-teacher. Usually, a qualified special Classics teacher is employed to support a child in curriculum areas relevant to humanities. Moreover, a Maths or Physics teacher is employed to support the child in curriculum areas relevant to sciences. Thus, the special co-teachers need to collaborate with more than one

general teacher in the same co-taught classroom and probably with a general teacher whose specialism is different. Lastly, the special co-teachers are employed on a part-time basis to support a child or children with SEN in mainstream schools.

In terms of the in-service training, all special co-teachers in all local schools across the country need to attend an in-service training seminar. The aim of this in-service training is to develop teachers' knowledge with regard to co-teaching, special educational needs and inclusion. Please note that general education teachers have not taken any in-service training about co-teaching. Their specialism – if they have one – is dependent upon their personal willingness to expand their knowledge in disability and inclusive education.

Regarding the children who are educated within the co-taught classroom, they should all be provided with an official diagnostic report by a local diagnostic centre (KEDDY). This centre identifies that co-teaching is an appropriate inclusion model for some children with SEN. Usually children with mild intellectual disabilities, with high functioning autism, mild mental disability, sensory needs and physical disabilities attend co-taught classrooms. It should be noted that only parents whose child has been identified as having autism are permitted to request a private special assistant (Decision 14/6/2011-Co-teaching for autistic children) instead of a special teacher being employed by the Ministry of Education. This private special assistant is not required to be a qualified teacher, but *is* required to be approved by the local diagnostic centre and school.

2.5.3 Co-teaching and issues with regard to its practical implementation

The practical implementation of this teaching method and inclusion model in Greece has encountered many problems. These problems have to do with the weakness of the Greek policy to determine clear and discrete criteria in terms of identifying what children can be favoured by this support service delivery causing various misunderstandings. The most recent law in 2008 (Law 3699/2008) attempted to specify the circumstances under which co-teaching could be provided to children with SEN. According to the above law, co-teaching as an inclusion teaching method is provided to children who are capable of following the typical curriculum or to children who have serious SEN with the precondition in their local area where there is not another special school/integration class; or when the needs of children are so serious that co-teaching is seen as important and necessary by the national institute of identifying and assessing children's special educational needs.

These criteria have to do with contradictory issues such as the severity as well as the insignificance of child's disability, the area that a child is located and the decision that the relevant institute would reach. Thus this, the national institute of identifying and assessing children's SEN (KEDDY) determines co-teaching as a necessary inclusion teaching model for some children with SEN and not for all children with SEN. Last but not least, parents play an

important role in this issue; this is because a necessary precondition for allocating a co-teacher to support a child with SEN in a mainstream classroom is only if parents wish to. Thus, every academic year, parents need to submit an application to the Ministry of Education requesting a special teacher to undertake the role of co-teacher within a child's mainstream class. In Greece, this inclusion teaching model is implied under specific circumstances and to some children with SEN under specific preconditions. Hence, in Greece there are specific limitations in the application of this inclusion model and it is used in limited circumstances compared to *integration classes* which are widely implicated in mainstream schools.

The ambiguity of the above limitations is reflected on the report of Mosxos et al. (2009) in which several problems – in terms of the practical implication of this inclusion model – are mentioned. It should be explained that this report was drafted by Mosxos et al. (2009) who were lawyers that voluntarily work for the independent non-profit organisation or body named 'Advocate of the Citizen', operating in Greece since 1998. The main focus or target of this body is the application of the principle of equal treatment, the rights of the child and vulnerable groups. Therefore, this body is staffed by lawyers who gather denunciations by citizens about various issues in relation to children and vulnerable groups.

Specifically, the report focuses on the problems caused by the fact that co-teaching is not provided to all children needing co-teaching, and thus, without meeting all children with SEN needs. Furthermore, *co-teaching* provision usually starts in the middle of the academic year or; worse still, it frequently may not be provided at all to some children with SEN who are entitled to be supported by co-teaching in a mainstream classroom. Added to this, various practical dysfunctions are noted such as provision of support on a partial basis (some hours per day), withdrawal of children with SEN in a separate room and implementation by a general education teacher (instead of a special education teacher) without having any specialism or relevant experience. Briefly, the practical implications of this inclusion model face many challenges in Greece. Hence, it would be prudent to consider further research with regards to the effectiveness of co-teaching in Greece.

2.6 Research evidence

2.6.1 How co-teaching is implemented

A small amount of research has focused on investigating how co-teaching is implemented around the world. These studies illustrated below have focused on teachers' actions within the classroom, the roles and responsibilities, their collaboration; on teacher-student interaction and students' actions, with somewhat varied findings.

It should be noted that in many studies, researchers concluded that teachers in co-taught classrooms did not fully share their roles and often did not actually co-plan. Specifically, Murawski (2006) conducted research in a secondary school in Los Angeles. He observed four teachers' actions participating in four different settings, namely in co-taught classrooms, ordinary classes, special classes and classes where only children with no disability participated. He found that in co-taught classes limited collaboration and little role exchange between teachers were observed. He also found that teachers failed to co-plan or use the various teaching approaches which are considered as being important to this teaching model. In terms of their teaching actions, he found that both special and general education teachers spend the majority of time not teaching at all, and the least time on providing face-to-face teaching to pupils. Lastly, he found that special education teachers work together with children, but their main role was to provide help to the general education teacher by circulating among students.

Moreover, a significantly large amount of observational and generally qualitative research concluded that the most frequently used co-teaching model was the *one teach one assist*. Specifically, Welch (2000) observed co-teachers' instructional actions in two classrooms in the west of USA. and found that this model was the most dominant, followed secondly the model of station teaching. Also, students were often grouped into large groups. Moreover, McDuffie et al., (2005) observed teachers' and students' behaviour in co-teaching and traditional classrooms and found that the most frequently used models were mainly the team-teaching model and the one teach-one assist. Consistent with the above findings, Scruggs et al., (2007) searched in electronic databases for papers relevant to co-teaching or team teaching in order to investigate the co-teacher's roles in the approach. Thus, they conducted a metasynthesis of thirty-two qualitative studies from various countries of the world. They found that the most common co-teaching model used by co-teachers was "*one teach, one assist*".

Added to this research, focus has also been directed towards teachers' as well as students' (disabled or not) actions. Harbort et al., (2007) conducted video observations on two pairs of co-teachers in a school at the State of Georgia in the USA. They observed co-teachers' instructional actions within co-teaching classrooms. They found that general education teachers presented lesson content more often than special education teachers, using the one large-group instruction method. On the one hand, general education teachers spent more time on non-instructional activities and managing pupils' behaviour than special education teachers. On the other hand, a particularly noteworthy finding was that, special education teachers provided

answers to pupil's queries more often than general education teachers. Similar findings were revealed by Magiera and Zigmond (2005). Using structured observations on interaction between teachers and pupils with SEN, they conducted a study in four secondary schools in New York observing eight co-teaching pairs in co-taught classrooms and eight teachers in non co-taught classrooms. It was uncovered that general education teachers interacted less with children with SEN in co-taught classes than the special teachers. Also, children with SEN received more individual instruction in co-taught classes.

However, evidence has also been found which contradicts these findings. In contrast with Magiera and Zigmond's (2005) research, Zigmond (2006) investigated eight co-teaching pairs and students' actions within co-teaching classrooms in five secondary schools at Pennsylvania and western New York. She observed limited interaction between special education teachers and children. Furthermore, McDuffie et al., (2005) investigated the interaction between teachers and students in eight classes at the eastern USA. Specifically, they investigated teacher-student interaction in four co-taught classroom compared with four non-co-taught classrooms. They found that students in traditional classes cooperate more with teachers than in co-taught classrooms.

2.6.2. Teachers' perceptions

Factors influencing the (successful/ unsuccessful) implementation of co-teaching Collaboration

Several studies investigating co-teachers' perceptions focused on or revealed factors that are essential to the implementation of the co-teaching instructional model. Within the relevant literature several factors have been identified as positively contributing to co-teaching. The inclusion model of co-teaching demands close collaboration between co-teachers in order to be successfully implemented. Firstly, Mastropieri et al., (2005) observed co-teaching pairs through five case studies in primary and middle schools in the USA. They found that both excellent and inharmonious partnerships occurred. However, teachers linked the good partnerships with the successful implementation of co-teaching and thus as successful inclusion of disabled children within mainstream classrooms. Moreover, teachers expressed that good collaboration within a co-teaching pair resulted in boosting children's academic progress.

Research on co-teaching indicated that co-teachers expressed not only positive but also negative views with regards to their collaborative experience. Indicatively, Saloviita and Takala (2010) surveyed 434 teachers at one school in Finland. They found overall that general teachers have a positive experience collaborating and co-teaching with special teachers. Similarly, Austin (2001) surveyed 139 co-teachers from nine different schools in New Jersey, finding that teachers expressed positive views in terms of their collaboration. Lastly, Walther-Thomas (1997) observed and interviewed 23 co-teaching pairs from eight schools at Virginia. His participants overwhelmingly stated that that co-teaching resulted in good collaboration between both parties. Moreover, many teachers felt that their professional knowledge was

developed as well as their self-confidence as a result of receiving personal support by their partner.

By contrast, Salend et al. (1997) investigated one pair of co-teachers' perceptions with regard to their co-teaching experiences. This pair collaborated in a kindergarten school located in New York. He found that although teachers believed that co-teaching resulted in their professional development, they viewed collaboration with another teacher within the classroom as a very complicated matter. Specifically, according to their views these difficulties derive from the different philosophy and instructional methods that each teacher uses.

Mutual planning time

Many researchers (Sileo 2011; Hang & Rabren 2009; Magiera & Zigmond, 2005) stressed that the development of communication between co-teachers is a decisive feature for successful collaboration between them. Particularly, sharing mutual planning time enables co-teachers to share views with regard to their roles, responsibilities, instructional methods teaching approaches – key components of successful co-teaching (Hang & Rabren 2009).

Research investigating teachers' perceptions in terms of co-teaching has also revealed the significance of shared planning time among teachers. Specifically, Buerck (2010), Murawski (2006), Welch (2000) and Walther-Thomas (1997) found that teachers mainly expressed the need for more common planning time with their co-teachers as the limited mutual planning time had a negative effect on their teaching. Furthermore, Takala and Uusitalo-Malmivaara (2012), who surveyed co-teachers in four Finnish schools, found that co-teachers expressed the view that the limited time for lesson planning limited their collaborative success.

Similarly, Hang and Rabren (2009) investigated the perceptions of 45 co-teachers, who worked in primary as well as in secondary schools in south-eastern USA. They found a general consensus among teachers, who saw that they need more common planning on a weekly basis in order for co-teaching to be implemented successfully. Specifically, they believed that they need mutual time with regard to planning issues such as lesson content or assessment of pupil's learning. Paradoxically, in Austin's (2001) survey, although the majority of teachers saw that they need planning time on a daily basis, they expressed concerns in relation to whether daily planning time would be sufficient or adequate.

Training in co-teaching

The need for teacher training on co-teaching has been strongly emphasized within the literature. Teacher training in co-teaching is considered to promote the inclusion of children with SEN in mainstream classrooms, resulting in increased learning opportunities for all children including students who are low achievers (Budah et al., 1997). Buerck (2010) surveyed in total seventeen general and special education teachers who co-teach in a secondary school in Southern Illinois. He found that both general and special teachers saw that they received limited training with regard to co-teaching and as a result they felt unprepared to cover their post.

Teacher training in co-teaching is considered to enhance the “role-exchange” between co-teachers and to promote teachers interaction with students. Based on research evidence, Budah et al. (1997) conducted research gathering data of sixteen pairs of co-teachers (eight of them were the experimental group and the remaining the comparison group) who worked in secondary schools in the USA. The researchers used the teacher training methods as an intervention process. Before teacher training, the researchers observed that usually one teacher takes the leading role of instruction, while the other (usually the special teacher) takes a more inactive role standing next to children. Also, the training, limited data of role exchange and interaction between them during the instruction process had been observed. However, after the intervention, it was observed that both of the teachers took a more active role as they interchanged their instructional roles more often and they used more time on intervening on pupils’ learning.

Teacher training in co-teaching is considered to result in academic benefits for children with or without SEN. In a similar way to Budah et al. (1997), Welch (2000) conducted experimental research in two primary co-taught classrooms in western North America. He used teacher training in co-teaching as an intervention process in order to investigate the academic outcomes of co-teaching in relation to 45 children, with and without SEN, in two classes. He found that after teacher training, children both with and without SEN in both classes improved their school performance – particularly their reading and spelling skills.

Clear understanding of roles and responsibilities

Within the literature, a clear understanding of teachers’ roles and responsibilities in a co-teaching classroom has been stressed as a significant factor of a successful co-teaching (Sileo 2011; Hang and Rabren, 2009; Wilson & Michaels, 2006; Magiera & Zigmond, 2005). Hence, research has been focused on teachers’ perceptions with regard to this issue. Indicatively, in Austin’s (2001) survey research, the majority of teachers perceived the clear distribution of teachers’ roles within a co-teaching classroom as very important.

Despite the perceived centrality of a clear understanding of roles and responsibilities, several studies have demonstrated a significant level of role confusion between teachers. Buerck (2010) surveyed in total seventeen general and special education teachers who co-teach in a secondary school in Southern Illinois. He found that co-teachers’ perceptions of their roles were very different among the co-teaching pairs and incompatible with each other. Added to this, in the research of Buerck (2010) and Salend et al. (1997), the co-teachers expressed concerns and felt confused with regard to what role they should undertake within the classroom.

Worryingly, further evidence has added weight to concerns regarding a mismatch in perceptions between co-teachers. Fennick and Liddy (2001) conducted a survey in 168 general and special education teachers who worked in schools in a Midwestern state in the USA. They found that both groups of teachers felt as being more responsible for teaching and managing the

behaviour of pupils than the other, which indicated misunderstanding in role delineation. Lastly, Hang and Rabren (2009) surveyed 31 general education teachers and 14 special education teachers who worked in primary and secondary schools in the USA. They found that there was an inconsistency between teachers' perceptions with regard to their role. Almost all special education teachers stated that they were responsible for children's behaviour management, while similarly almost all general education teachers believed exactly the same. Namely both groups of teachers saw themselves as mainly responsible for managing the behaviour of pupils.

Academic and social outcomes of co-teaching

The literature and research relevant to co-teaching have extensively focused on academic and social or behavioural outcomes of co-teaching to children with SEN, to low-achieving pupils as well to typically developed children within mainstream classroom. The researchers investigated this issue directly using experimental research designs. Moreover, researchers gathered pupils' grades on various courses or obtained test scores aiming at examining children's potential academic improvement. Also, some researchers gathered data based on files that reported children's behavioural problems and their classroom attendance, aiming at investigating co-teaching social and behavioural outcomes. Lastly, researchers examined this issue indirectly investigating perceptions of the academic and social outcomes of co-teaching, of co-teachers, children with SEN and typically developed pupils.

Outcomes of co-teaching investigated in a direct way

Various studies have investigated the academic and social outcomes of co-teaching in a direct way. Specifically, Hang and Rabren (2009) investigated the potential academic and behavioural outcomes of co-teaching to children with SEN. They collected test scores of 58 pupils with SEN who attended primary and secondary co-taught classrooms in the USA. They collected scores from three main courses: English, Maths and Arts. They compared these scores with those from a year before, when the same pupils did not attend a co-taught classroom. They found that pupils with SEN improved their academic performance during the co-teaching period, specifically in reading and Maths. However, this improvement was not significant compared to the whole school population at the same grade level. Also, they gathered data based on files that reported children's behavioural problems and their classroom attendance. The same comparison process between co-teaching and non co-teaching period revealed that the pupils' reported behavioural difficulties and no attendance increased from the non co-teaching to co-teaching periods. This increase was statistically significant. Also, Idol (2006) investigated the tests scores of students who participated in primary and secondary co-taught classrooms, where 311 students with SEN participated. She found that the final subject marks of children, with and without SEN, slightly improved as an impact of co-teaching.

Studies aiming to identify the academic effects of co-teaching on students compared to other settings or teaching approaches have, so far, proven to be largely positive. Specifically, Buerck (2010) investigated the effects of co-teaching on typically developed children participating in co-taught classrooms compared to the effects of those children participating in ordinary education

classes. In total the grades of 441 students participated in both settings were investigated. Buerck (2010) conducted pre- and post-test on various courses and found that typically developed children who participated in co-taught classrooms improved their academic performance and this improvement was more significant for low-achieving students. Also, Tremblay (2013) conducted an experimental research aiming to investigate the effectiveness of co-teaching to children with intellectual difficulties. He compared children's writing, reading and mathematics skills in 12 co-taught classrooms and in 13 special classes. He found that children participating in co-taught classes significantly improved their writing and reading skills compared to traditional special classrooms.

Moreover, Budah et al. (1997, p. 312) followed an experimental research design using teachers' training as an intervention process. In a co-taught classrooms 16 children with mild intellectual difficulties and 16 low achiever students were included, while in the non co-taught classroom 14 children with mild intellectual difficulties and 18 children low-achiever students were included. They found that the 32 pupils in co-taught classrooms improved the use of some "strategic skills" (i.e. "the information mastery and analysis of concept") to a greater extent than the 32 pupils participating in typical classrooms. Comparisons were also drawn between pupils identified as having intellectual difficulties and low-achiever pupils and it was found that low-achiever pupils used the skill of "paraphrasing" more effectively than children with intellectual difficulties who – it was reported –used no one *strategic skill* better than low-achiever students. Furthermore, researchers collecting pupils' test grades found that after teachers receiving training the test scores of pupils who were identified as having intellectual difficulties were decreased, while those of low achievers slightly increased. Moreover, Jang (2006) conducted quasi-experimental research in four secondary classrooms in Taiwan. She found that the 63 students' test scores improved on co-taught classrooms compared 61 students participated in non co-taught classrooms.

Indeed, not all findings on co-teaching outcomes have been positive. Murawski (2006) conducted experimental research gathering score grades from students participating in co-taught classes compared to students participating in three different settings in the USA. These included in mainstream classes including some pupils with SEN, in classes in which only typically developed children participated and finally in classes in which only children with special education needs are included. Murawski found that children who participated in classes where only typically developed students are included improved their academic performance more than children who participated in co-taught classes. However, this improvement was not statistically significant in various settings and between disabled or non disabled children.

Social and behavioural effects of co-teaching in children are also an important area for consideration. Nonetheless, these effects remain – so far – another largely underexploited area of research. Two studies relevant to social and behavioural effects of co-teaching in children will now be examined here. Firstly, Vaughn et al. (1998) investigated the social effect on students enrolled in primary co-teaching classrooms compared with students enrolled in classrooms

where the consultation model is implicated. In total, 185 pupils with and without SEN participated in both settings located in south-eastern USA. They investigated children's acceptance with each other, children's self-esteem, their friendships within the classroom and the quality of their friendships. They found that children who participated in consultation classrooms developed more valuable relationships with their peers and they were accepted by their classmates in a better way than children enrolled in co-taught classrooms. Also, they found that children with SEN within consultation classes tended to make more friends during their participation in those classes. Secondly, Walther-Thomas (1997) investigated 119 teachers' perceptions about the social effect of co-teaching to children who participated in primary and secondary education schools. Teachers mentioned that the social skills, self-esteem and self-estimate of children with and without SEN participating in co-teaching classrooms had improved.

Outcomes of co-teaching that investigated in an indirect way

Hang and Rabren (2009) investigated the perceptions of 45 co-teachers and 58 pupils with SEN with regard to academic and social outcomes of co-teaching. This study took place in seven schools in the USA – four of which primary education schools, while three were secondary education schools. It was found that, overwhelmingly, participants believe that children with SEN improved their learning skills within co-teaching classrooms. Also, co-teachers felt that the behaviour of children with SEN within co-taught classrooms had also improved, with the special education teachers being particularly in favour of this argument. Although there was not any evidence which proved the above consideration, children with SEN concurred with these views, feeling also that their own behaviour had improved. Similarly, McDuffie et al. (2009), investigated teachers' perceptions with regard to co-teaching in four general and four special education secondary classrooms in eastern USA. They found that teachers had generally positive perceptions towards co-teaching and they saw that children in co-taught classrooms benefit academically more than in traditional classes. Similarly, Takala and Uusitalo-Malmivara (2012) who surveyed co-teachers in Finnish schools, found that teachers had generally positive perceptions towards co-teaching and considered the extra attention was beneficial to children.

Further examples of positive perceptions from teachers regarding co-teaching can be seen in the literature. Austin (2001) surveyed 139 co-teachers from nine different schools in New Jersey and found that teachers believed that their students benefited academically as a result of their participation in a co-taught classroom. Similarly, in research conducted by Salend et al. (1997) and Walther-Thomas (1997) co-teachers indicated that co-teaching resulted in disabled and non-disabled children's social and academic improvement. Lastly, Vaughn et al. (1997) investigated teachers' perceptions with regard to children's behaviour in *co-taught* compared to *consultation* classes. The classes were included in two primary education schools in south-eastern USA. They found that teachers perceived that children improved their behavioural skills in both settings during the academic year; however these positive perceptions were not statistically significant.

2.6.3. Children's perceptions

Little research has been focused on investigating children's perceptions and preferences with regard to the implementation of co-teaching, which is surprising given that positive perceptions may be a key component of successful co-teaching. The existing research has, nonetheless, largely revealed that pupils have generally positive attitudes towards co-teaching. Children believed that co-teaching improved their academic performance, as they received extra individual help. Indicatively, McDuffie et al. (2009) investigated the perceptions of 203 children with and without disabilities with regard to co-teaching from six secondary education classrooms in eastern USA. The researchers found that children had overall positive perceptions towards co-teaching and the majority of them stated that they preferred co-teaching classrooms than traditional ones with more individual support received.

However, in other studies children expressed some disadvantages of co-teaching as well. Specifically, Gerber and Popp (1999) also investigated the perceptions of children with and without disabilities in four primary and in six secondary education schools at Virginia State in the USA with 123 pupils interviewed. The researchers found that all children expressed positive feelings in terms of co-teaching as an inclusion model. Children saw that co-teaching improved their self-esteem and their academic performance. Specifically, the advantages that both disabled and non-disabled children see under the co-teaching approach is the increased individualized attention, the variety of teaching methods, the quality of teaching and the better learning outcomes for them, which in turn boosted their self-confidence. The majority stated that they would like to participate again in co-taught classrooms expressing positive feeling in terms of the academic outcomes of co-teaching to all children in general. The disadvantages that both disabled and non-disabled children perceived were numerous, such as the increased teachers' attention towards their bad behaviour as a result of the two teachers being present and divergent teaching styles, which caused some confusion.

Similar findings were provided by Jang's (2006) quasi-experimental research regarding perceptions of 63 Taiwanese state-schooled children, with and without SEN, on co-teaching implementation. The researcher found that the majority of children were more in favour of participating in co-teaching than in typical classrooms. Also, children expressed positive perceptions with regard to co-teaching contribution on their academic performance and improvement. However, some of them expressed that the various and different teaching methods adopted by the co-teachers puzzled them.

Similarly, Wilson and Michaels (2006) investigated disabled and non-disabled children's perception in relation to co-teaching. In total, 346 students were surveyed, who included in five secondary schools located at the USA. The researchers found that children had overall positive views with regard to co-teaching approach, with disabled children being more positive. Specifically, both disabled and non-disabled children felt that co-teaching resulted in their academic progress, the improvement of their reading and writing skills and expressed

favourable opinions with regard to a possible enrolment in a co-taught classroom again. In terms of the advantages that both sub-groups of students perceive, these include the availability of help, and the various teaching approaches that teachers use during the lesson. With respect to their perceived disadvantages, children felt that the variety of teaching approaches applied by each of the co-teacher confused them and the higher expectations of teachers caused some anxiety. Lastly, Hang and Rabren (2009) surveyed disabled students' perceptions of co-teaching. In total, 58 students with SEN participated. These children included in four primary and three secondary education schools located at the USA. The researchers found that disabled children viewed the co-teaching model favourably as they believe it resulted in their academic, behavioural and self-esteem development.

In summary, an overall picture of largely positive perceptions of children on co-teaching can be seen through the studies, despite some confusion related to the actual roles of co-teachers.

2.6.4. Greek research about co-teaching

A limited number of studies have been conducted with regard to co-teaching in Greece. Specifically, Mavropalias and Anastasiou (2016) conducted a survey research in the academic year of 2010-11. They aimed at investigating how the Greek model of parallel support is implemented, what the teachers' preparation for co-teaching entailed and their suggestions for change. In total, 236 special teachers from primary, secondary and kindergarten education levels responded. These teachers came from six different Greek districts and the response rate was almost 78%. They found that the model of parallel support is closer to the model of one teach-one assist, while the majority of special teachers had limited professional preparation in co-teaching. Lastly, teachers suggested that support by the Greek education authorities, teachers' training in co-teaching, and increased collaboration between teachers and various parties that are responsible for the support of children with SEN (i.e. KEDDY).

Strogilos and Tragoulia (2013) investigated primary mainstream co-teachers' roles and responsibilities, their perceptions/understandings of their roles and their relationships with disabled children's parents. The methodology used was multiple case-studies, in which observations, interviews with co-teachers and interviews with disabled children's parents were conducted. They found that limited collaboration and limited mutual planning between co-teachers occurred. Also, they found that the most dominant model of co-teaching used by teachers was the *one teach-one assist* model. However, in two cases they observed the use of the *parallel* co-teaching model. Among the dominant worries that teachers expressed was the lack of co-teaching and special education teaching preparation.

More recent research in co-teaching field was conducted by Stefanidis and Strogilos (2015). They investigated primary education co-teachers roles and responsibilities and their attitudes towards their roles. They found that general and special education teachers had different attitudes with each other towards their roles. Specifically, they found that the special teachers were more in favour of their own participation in responsibilities related to all children than the

general teachers. Also, special teachers were more positive about general teacher's participation in responsibilities related to children with SEN. With regards to the way co-teaching was implemented by co-teachers, the researchers found that the one teach- one assist was the dominant co-teaching model used. Thus, they found that the special teachers' role was focused on individual children with SEN included in co-taught classrooms. By contrast, the special teachers' role expanded to all children was only seen to a limited extent.

Moreover, Strogilos and Stefanidis (2015), who surveyed four hundred primary and secondary education co-teachers found that the teachers favour the curriculum alterations, the classrooms that include children with varied capabilities and the general teacher's role expansion to children with SEN were inclined to believe that children with SEN tend to improve their social, academic and behavioural skills in co-taught classrooms to a greater extent compared to typical classrooms.

There are also a small number of master's dissertation studies with regard to co-teaching. Specifically, Arnidou (2007), in her master dissertation research used the method of interview to investigate primary education special teachers' perceptions of co-teaching and their roles within this teaching model. She found that although teachers had generally positive perceptions with regard to *inclusion* they expressed doubts with regard to effective inclusion of disabled children within mainstream schools, suggesting as a solution for them the partial withdrawal to separate rooms or their participation in integration classes. Their main concerns were the lack of training and the limited information they have with regard their roles and responsibilities that they should undertake. In terms of their role understanding, they viewed themselves as having a complementary or supportive role mainly in relation to children with SEN included within a classroom, while the dominant instruction role was undertaken by the general education teacher.

Lastly, Kabanellou (2011), in her master dissertation used the method of questionnaire aimed to investigate primary education special and general co-teachers' perceptions about co-teaching. They expressed generally positive views with regard to the co-teaching model. Specifically, they felt that this model could be also beneficial for non-disabled children. Among the barriers for implementing co-teaching, teachers the following: curriculum content as being inflexible, the general education teachers' insufficient training and the limited co-planning time. In contrast, in research conducted by Vlachou (2006) the special teachers allocated to integration classes expressed doubts in terms of a potential positive collaboration between two co-teachers. The special teachers also expressed doubts as to whether in-class support could help children. All the above research evidence showed that successfully co-teaching within the inclusion model represents a significant challenge: it is vital to constantly reinforce effective co-teacher collaboration.

2.7 Research questions

The following section details the general research questions as well those specific to each part of the study. The emergent themes of the literature review have, it can be seen, strongly influenced the design of these questions.

GENERAL RESEARCH QUESTIONS OVER BOTH METHODOLOGIES	
1. How is co-teaching implemented in secondary education classrooms and why? 2. What are the secondary education co-teachers' and students with SEN perceptions with regard to co-teaching?	
Research questions for each of the used methodology	
Survey to teachers: Research questions THROUGH SURVEY QUESTIONNAIRE	Case studies: Research questions THROUGH OBSERVATION AND INTERVIEWS
What are special and general education teachers perceptions regarding: a) their roles and responsibilities b) their collaboration with each other and their mutual planning time c) the academic and social outcomes of co-teaching to disabled children d) the factors affecting the successful implementation of co-teaching and to what extent e) their preparation for co-teaching	1. How co-teaching is implemented within secondary education classrooms? a) What are the co-teachers roles and responsibilities in relation to classroom grouping? b) What practices are being employed by co-teachers to enhance pupil's leaning/success? c) What is disabled students' engagement within a co-teaching class and what are the interactions of disabled children with co-teachers? 2. What are teachers' perceptions with regard to: a) their roles and responsibilities within their co-teaching classroom b) challenges/problems they encountered to implement co-teaching c) facilitations to implement co-teaching d) social and academic outcomes of co-teaching to disabled children e) their academic preparation for co-teaching f) their each other collaboration 3. What are the perceptions of students with SEN with regard to: a) experiencing co-teaching and its arrangements? b) their own social and academic outcomes of co-teaching? c) their preferences in terms of co-teaching? d) special teacher?

3. Methodology

3.1. Brief and critical review of the literature relating to methodological research approaches used and issues with regard to the conducting of research on co-teaching

At an international level, and especially in the USA, much research has been conducted regarding co-teaching. These studies followed various methodologies and research designs to meet various research questions. The majority of them used quantitative research designs (surveys using questionnaire as an instrument) (e.g. see Takala & Uusitalo-Malvmivaara, 2012; Saloviita & Takala, 2010; Buerck, 2009) or qualitative research designs (observations, interviews, case studies) (e.g. Murawski, 2006; McDuffie et al., 2005; Magiera & Zigmond, 2005) and some of them a mixed methodology (e.g. Hang & Rabren, 2009; Austin, 2001).

The various methodologies, detailed above, focused on investigating teachers' perceptions with regard to benefits or outcomes of co-teaching to teachers and children, the factors influencing co-teaching, teachers' perceived challenges/problems, teachers' co-operation, teacher's satisfaction from implementing co-teaching (e.g. Sileo, 2011; Wilson, 2008; Fennich & Liddy, 2001). Also, research focused on children's perceptions with regard to their preferences, obstacles, advantages/disadvantages and outcomes of co-teaching on them (e.g. McDuffie, et al, 2007; Wilson & Michaels, 2006; Gerber & Popp, 1999). The above methodologies and mainly qualitative or mixed methodologies focused on exploring teacher to child interaction, children's behaviour, teachers' practices and actions, teacher's roles and responsibilities.

Added to the above methodologies, there are also a number of studies that used an experimental research design with pre-and post-tests aiming at investigating the academic, social and behavioural outcomes of co-teaching to children. Researchers who used experimental research designs gathered data based on students' grades, standardised tests, discipline referrals, and behavioural indicators (e.g. Tremblay, 2013; Buerck, 2009; Jang, 2006; Murawski, 2006). A number of them used the training of teachers as an intervention process (Welch, 2000; Budah et al. 1997).

However, many researchers (Murawski 2006; Murawski & Swanson, 2001) have pointed to the need for carefully designed research with regard to co-teaching, as it entails many challenges. Within the co-teaching literature (Friend et al., 2010; Murawski, 2006), it is stressed that research on co-teaching includes six basic challenges as described below:

1. Co-teachers usually do not understand or make sense in the same way as the co-teaching model.
2. The successful or unsuccessful implementation of co-teaching is based upon teachers' individuality.
3. Researchers usually do not include data with regard to co-teachers' actions/practices during the co-teaching process. The detailed investigation of co-teachers' actions is considered to be very important as it is connected with the 'treatment integrity'

(Murawski, 2006; Murawski & Swanson, 2001). Namely, it is important to ensure whether the practice of co-teaching is actually competent with the basic components of co-teaching.

4. Research usually does not provide detailed information with regard to children included in co-taught classrooms. The need for providing accurate data in terms of children's special educational needs and learning and demographic characteristics, grade level, age, gender, lesson course and type of school (primary/secondary) has been strongly emphasized within literature (Murawski 2006; Murawski & Swanson 2001). As Friend et al. (2010, p. 21) stressed "without research more precisely addressing the many variables that could affect co-teaching implementation and outcomes, potentially effective practices may be lost in generalizations".
5. Research is usually conducted in classrooms where co-teaching is perceived by researchers as being successfully implemented, resulting in preconceived conclusions.
6. Outcomes of co-teaching on children are usually investigated only indirectly through teachers' and students' perspectives and not based on direct data (i.e. observations, test scores or grades, behavioural referral records).

Within the literature (Friend et al., 2010; Murawski, 2006; Murawski, and Swanson, 2001) it is widely emphasized that there is a growing need for more experimental research design and research based on evidence in order to provide data in terms of the efficacy of co-teaching to students and its academic and social outcomes for them. However, this attempt is described in literature as a very difficult and complex issue. This is because co-teaching outcomes on children with SEN are influenced by many variables – both and teacher oriented. The reasons are described below in detail:

- a) It is difficult to conduct research in a randomly selected sample
- b) The outcomes are closely linked with the teaching quality of co-teachers and how co-teaching is implemented. Given that there are variations in terms of teachers' co-teaching experience, knowledge and preparation, values and perceptions of co-teaching, the consistent implementation for amounts of time and the way instruction is delivered, this kind of research is described as being difficult to be conduct.
- c) The outcomes are closely linked with the various types of special educational needs of students included in a co-taught classroom. Given that there are variations in terms of children's demographic and learning characteristics, this kind of research is described as difficult to attempt.

For the above reasons, some experimental design research has been negatively critiqued by some researchers (Murawski & Swanson, 2001) for the reasons below:

- 1) Usually this kind of research does not include observational data in order to clarify the quality of co-teaching and how it is implemented (this is called *treatment integrity*)
- 2) Usually they do not include data in terms of type of SEN gender, age, primary/secondary school of children included in co-taught classrooms.

- 3) Researchers usually omit the presentation of some significant quantitative information with regard to the measures used in their experimental and quantitative research designs. Specifically, Murawski and Swanson (2001), conducting a meta-analysis of 89 quantitative researches with regard to co-teaching efficacy or outcomes to children, found that only six of them provided sufficient effect size measures in order to identify the co-teaching effectiveness for children.

3.2. Brief summary of my position concerning the methodological issues in the light of the Greek educational co-teaching complexity

Setting the scene for my methodological decisions with regard to the research design of the study, a brief reference for the Greek educational complexity is considered to be necessary:

- Co-teaching as well as teacher's roles and responsibilities within it are not clearly defined in any official educational paper or in co-teaching policy guidelines. However, as Friend et al. (2010) stressed "researchers must be sure that co-teaching is clearly defined in order to ensure a general level of comparability of services".
- There are considerable variations with regard to teachers' teaching experience and experience in co-teaching as well as teachers' training on co-teaching or teaching children with special educational needs. It should be noted that some teachers –general as well as special educational teachers – may not have been involved in any co-taught class before or may not have any qualification/training in teaching children with special educational needs. This also may apply even to teachers who are working under the role of special education teacher in a co-taught class.
- Co-teaching pairs are changed every academic year. Namely, it cannot be relied upon that the same special education teacher will be allocated in the same co-taught classroom as he/she was in the previous academic year.
- Co-teaching is not a widespread inclusion model in Greece. Hence, co-teaching is not implemented in every school and children supported by this model are sparsely located across the country.
- There are not certain criteria identifying which children (type of SEN, age) will be supported by this inclusion model. Hence, children with various special educational needs, learning and demographic characteristics may or may not be supported by this inclusion model.
- Research about co-teaching within the Greek education system is very limited. Thus, there are not much evidence and data identifying how co-teaching is implemented or how it is perceived by its basic consumers, namely teachers and children.

Three issues will be borne in mind:

- 1) The various challenges described above with regard to the conducting of research about the co-teaching approach,
- 2) The Greek educational co-teaching complexity,
- 3) The research on co-teaching about Greek secondary schools that is in a very early stage, this research focused on:
 - o Co-teaching implementation (i.e. teachers' roles and responsibilities, teacher's actions and practices) and teachers' justification of their practices followed
 - o Teachers' perceptions of co-teaching (i.e. factors influencing co-teaching, teachers' collaborative experience, outcomes on children with and without SEN)
 - o Perceptions of children with SEN on co-teaching (i.e. preferences, advantages/disadvantages of co-teaching, outcomes on them)

The above research aims and targets indicated that it would be most suitable to follow a mixed design methodology.

3.3 Philosophical position of the study

Setting the scene of the methodological approach of the present study, a reflection on the philosophical assumptions beyond the *co-teaching* model – which informed the epistemological and ontological position of this research – is considered to be necessary.

Co-teaching is seen as a teaching model aiming to promote more inclusive practices in Greek mainstream schools. Among the basic principles or aims of inclusion is the promotion of the academic and social progress of disabled students included within mainstream. This point of view is also expressed by other commentators on this issue (Polichronopoulou, 2003; Booth, 1999). It is seen that co-teaching is implemented in a different way within the various educational contexts. Also, the meaning of co-teaching within a specific context is informed by its practical implementation and the way co-teaching is implemented is based upon teachers' practices and actions. These practices are seen as being closely linked with teachers' perceptions and justifications of the necessity of using them. Also, the way co-teaching is implemented is viewed as being influenced by student-oriented factors such as children's preferences, as well as by socio-cultural factors such as the educational provision or policy guidelines and the way in which the disability is perceived to be in various contexts.

Hence, this research is underpinned by pragmatic philosophical assumption. This assumption is based on the view that "knowledge is associated with the action, related and defined by the outcomes or the necessity of the action and is a mean of facing the reality" (O'Leary, 2007). This position is based on the assumption that "in order to discover the meaning of an idea we must ask for its consequences" (Dewey, 1948, *cited in* Johnson and Onwuegbuzie, 2004, p.

17). As Alexander (2006 p. 213), explained the pragmatic assumption is based on the view that Aristotle firstly expressed. He writes:

One must inquire into the norms that govern the culture in which that person lives and the reasons why he chooses to behave in this way and not that. Humans are purposeful beings; and to understand their actions we are compelled to reference teleological explanations that articulate the purposes that move people to act.

He also explained the nature of knowledge in the following:

Knowledge—at least in education—is always the possession of an embodied agent, constrained by language, culture and history, who grasps, albeit imperfectly, the contours of an entity or the meaning of an idea that transcends—exists independently or outside of—his or her limited experience (p. 214).

Setting the scene of the study's methodological approach, it should be stressed that within the literature there are many commentators who advocate that the pragmatic assumption is underpinned by a certain methodology that is the mixed methodology (Mertens & McLaughlin 2004). This is because according to pragmatism, "knowledge of the human condition in short, is first qualitative in nature—and to the extent that measurement comes into play, it is for the sake of making more precise the qualities that we seek to clarify, understand and distinguish" (Alexander, 2006, p. 214). In reflecting on the above debates, as Niglas (2004) explains the association of a mixed design methodology with a specific philosophical assumption is somehow a trap to what actually mixed methods research was trying to avoid: the dualism and the stereotypic connection with certain ontological and epistemological approaches. Viewed from this perspective, it should be stressed that the decision to adopt a mixed-design methodology is based on the philosophical assumption that this study also adopts: the dual aim of this study is to evaluate and describe the implementation of co-teaching in Greek schools as well as to investigate teachers' and students' perceptions. This research design is based on the assumption which is eloquently expressed by Hammersley (*cited in* Punch, 2005, p. 25) that the choice of one method does not lead to an opposition to the other and the decision about the choice of methodology should be dependent upon the circumstances, research questions and aims. Also, as Niglas (2009, p. 34) stresses it is the "concrete research problem or aim and not only the philosophical position which determines the design".

Hence, this research will follow a mixed design methodology. The adoption of a more flexible methodology could provide answers to the research questions. Namely, answers in both general research questions will be based on survey (quantitative approach) and case study methodology (qualitative approach). However, the quantitative approach and qualitative approach have clear roles in the research. On the one hand, the qualitative approach aims to gain a deeper understanding of the implementation of co-teaching in Greek schools schools – adopting also an interpretive role to the various responses of survey to teachers; on the other

hand, the quantitative approach aims to expand our understandings to a wider sample of teachers – aiming to gain a richer picture of the implementation of co-teaching and teachers' perceptions.

3.4 Justification of the term “mixed design” and rationale for adopting a mixed design methodology

Setting the scene of my methodological research approach, a justification of the term *mixed design* is needed. Different terminology and definitions have been used within the educational research literature to describe this research methodology. Niglas (2004), who conducted research investigating the terminology of mixed-method research, presented some of these terms: *multi-method*, *mixed methodology*, *composite method*, *two phase design*, *combined design*. Also, the variety of combinations which could arise within this type of research design resulted in differences in terminology, such as *mixed model* and *mixed method* research design (see Mertens & McLaughlin, 2004; Johnson and Onwuegbuzie, 2004) as well as *multimethod designs* (see Niglas, 2004).

Also, although the term *mixed method* research design is used as an umbrella term to describe the binding of quantitative and qualitative features across the various phases of a research, within the literature there is not a clear definition of what this term means. Brannen (2005, p. 181), explains that “a multi-method strategy may enter into one or more phases of the research process: the research design; data collection; and interpretation and contextualization of data”. However, other authors argue that mixed method research is considered to be “the mixing of qualitative and quantitative approaches within and across the stages of the research” or the combination of paradigms within research (Johnson & Onwuegbuzie, 2004, p. 19). Hence, As Niglas (2004) explains, this ambiguity regarding terminology resulted in the need to adopt a broader term, “*combined designs*” or “*mixed designs*”. Hence, the term mixed design will be used within this research paper.

This research design is connected with many advantages at various levels. This resulted in some authors e.g. Tashakkori and Teddlie (2003b, *cited in* Niglas, 2004) to advocate that this research design will be the dominant research approach of the 21st century. At a methodological level, this kind of methodology positively contributed to a better and in-depth understanding of complicated phenomena, attitudes and experiences rather than adopting a pure research design (Bryman, 2008; Mertens & McLaughlin 2004; Niglas 2004). Also, this research approach, combining qualitative and quantitative approaches and methods, is a way of limiting the weaknesses that each of the quantitative and qualitative approaches is considered to have (Johnson & Onwuegbuzie, 2004; Niglas, 2004). As a result, the various limitations of the research may be restricted. Hence, the quantitative research approach enhanced the generalisability of findings, which a pure case study approach could not provide given the small scale (BERA, 2013; Johnson & Onwuegbuzie, 2004). Also, the case study approach provided in-depth data, gaining insights into actions and perceptions and giving the chance to teachers to

justify their practices and perceptions (Johnson & Onwuegbuzie, 2004; BERA, 2013). At an epistemological and philosophical level, this research design helped me to avoid being trapped in the dichotomous dilemma of adopting a qualitative or quantitative paradigm which traditionally is connected with certain methodological approaches and assumptions (Niglas, 2004, Johnson & Onwuegbuzie, 2004). As Mason (2006) explained, the researcher should not be restricted by certain methodologies, but should choose the methodology which best supports the investigation of a social phenomenon.

This kind of methodology aimed at providing findings regarding the diverse research questions which according to Bryman (2008), results in “the *expansion* of the extent and scope of the research”. Furthermore, according to research literature (Bryman, 2008; Mertens & McLaughlin 2004), this methodology promoted and enhanced the objectivity and credibility of the research through triangulation of the findings. Furthermore this type of methodology increased the “the scope, the depth and the power of the research” (Punch, 2005, p. 235), which is one of the goals of the research. Moreover, the mixed-design methodology enabled the data confirmation via various means and ways, which contributes to more accurate findings and conclusions (Johnson & Onwuegbuzie, 2004). This methodology also identified possible conflicting views between the general and the special teachers who were co-teaching and between co-teachers and students, which resulted in enhancing – what is termed by Bryman (2008) as – the *initiation* of the research. Viewed from this perspective, the various contradictory data or findings gave me the opportunity to vary my interpretations (Johnson & Onwuegbuzie, 2004). Lastly, bearing in mind that just few studies have been conducted about co-teaching in Greek secondary schools, this research had the ambition to provide an in-depth understanding of the implementation of this instructional model. This aim, according to Bryman (2008), could therefore be addressed through mixed-design research.

3.5. Justification of the use of survey and case study methodological approaches

Survey

Aiming to expand understandings about co-teaching approach, a survey method enabled to describe the way co-teachers implement co-teaching, to investigate their perceptions and to make valid comparisons between groups of special and general education teachers (Bryman, 2008; Punch, 2005). Also, co-teaching is an inclusion model that was not implemented in every secondary education school. Thus, survey methodology helped me to reach respondents in many locations, which resulted in saving time and money (Bryman, 2008; Punch, 2005).

Case studies

Bearing in mind the various challenges of conducting research on co-teaching, a case study methodological approach was followed using mixed methods. Specifically, for first stage, observations in secondary co-taught classrooms conducted. For the second stage, interviews

with the co-teaching pairs and students with SEN participating in the co-taught classrooms were conducted. Taking into account that co-teaching is a relatively recent inclusion model applied within Greek mainstream secondary schools, limited information about the implementation of co-teaching is available. Thus, a case study strategy will provide accurate data with regard to this approach because, according to the literature, case studies result in a richer illustration of the “real world as experienced, in a naturalistic way, focusing on a phenomenon on context” (Robson, 2002, p.179). Furthermore, based on the view that research usually does not include teachers’ actions, a case study approach helped me to gain a fuller picture of co-teachers’ actions by combining actions with perceptions. This is because links between perceptions and actions are viewed by me as very complex issue and thus, this approach gained better insights into this issue.

Also, considering that teachers saw or understood the co-teaching model in different ways, a case study approach provided a deeper understanding about how phenomena are made sense of and experienced (Mertens & McLaughlin, 2004; Freebody, 2003). Moreover, case studies can provide insights into other similar situations and cases (Mertens & McLaughlin, 2004). This is very important if we consider that usually researchers of the co-teaching approach do not include data in terms of the students’ demographic and learning characteristics. Also, children identified as having special educational needs are seen by me as having unique learning characteristics across the various types of disability and within them. Thus, this approach provided more details with regard to children’s, teachers’ and the classrooms’ characteristics (Mertens & McLaughlin, 2004), aiming to link practices, perceptions and possible perceived outcomes of co-teaching with specific children included in co-taught classrooms. Furthermore, the fact that children’s characteristics and learning needs or difficulties were described accurately allowed possible comparisons with other similar cases.

What is very important to consider is that the successful co-teaching implementation is a complex issue influenced by many factors such as teacher’s personality, student’s personal characteristics, and school’s or systems-oriented factors. A case study approach offers a richer picture of the factors affecting an issue or a theme in the specific case that was studied (Mertens & McLaughlin, 2004). Lastly, case studies were used to complement evidence from the teachers’ questionnaires. Based on the literature (Punch, 2005; Stake, 1995) case study methodology does not provide generalizations of the findings. However, this approach helped me to interpret the various findings of the questionnaire in order to enhance the triangulation of the findings and to provide more confident inferences or conclusions.

Taking into account my research aims, multiple case studies conducted in order to gain a richer illustration of the co-teaching approach in various secondary classrooms. Specifically, a key goal was to investigate how co-teaching is implemented in various secondary classrooms and to make comparisons between the co-teaching classrooms or the co-teaching pairs studied, reporting possible differences and similarities. This aim, according to literature, (Yin, 1984) could be addressed through multiple case studies. Also, Yin (1984) categorised the case

studies into three types, based on the potential outcomes that case studies aim to provide. Based on this categorisation, the cases studies of the current research aimed to provide descriptive data about the co-teaching approach, the practices used by co-teaching pairs and the co-teachers' actions or interactions with children with SEN.

Also, bearing in mind the complexity of co-teaching, mixed-methods case studies were conducted in order to gain a richer picture of the co-teaching approach. Specifically, observations and interviews with teachers and students were used as research methods.

3.6. Two independent data collection research phases and justification for using them

Aiming to provide data to the research aims and questions, two independent and sequential research phases were conducted. At the first phase, a survey research was conducted and at a second phase multiple case studies were conducted. Namely, at a first stage survey respondents were requested to complete an on-line questionnaire and afterwards survey data (i.e. quantitative data) were collected. Sequentially, volunteer participants for case studies were sought to take part in observations and interviews to provide qualitative data. At the second stage, firstly the survey data were analysed followed by an analysis of the case study data. Lastly, at the third stage, data from both the two research phases were combined in order to provide conclusions with regards to the research questions.

In other words, within this research design the sample/participants of the study came from both of the two independent research approaches. The data collection and analysis process were also independent for each of the research phases. Namely, the questionnaire data (coming from the quantitative research approach) and case study data were collected and analyzed independently and sequentially in two phases. However, these data were integrated during the process of providing conclusions and inferences at the interpretation stage. Indeed, as Moran-Ellis, et al., 2006 (p. 55) stressed, “reconciliation may be accomplished through differing the resolution to the reader by allowing multiple accounts to stand alongside each other to reflect polyvocality”.

The decision to choose two independent and sequential research phases was based upon my personal theoretical position with regards to the indented purpose of conducting this specific study. Firstly, my personal goal is to know more about the co-teaching method gaining a fuller understanding of this approach. Hence, the two different used methods aimed at providing answers and inferences to common research questions. Namely, the two methods were incorporated to investigate the implementation of co-teaching in secondary mainstream schools and to gain an understanding of the co-teachers' and children's perceptions of co-teaching approach. Therefore, although the two phases remained independent of each other, equal weight was given to each of them and thus, both of them equally contributed to the research conclusions and findings. In other words, neither method was intended to inform the other one.

The above research design is closer to what is described by Moran-Ellis et al. (2006) as *integration* of methods, and not *combination* – *combination* implies that one method or approach has a more primary or significant role than the other, while *integration* implies combination of methods or approaches within the research phases, acknowledging that both methods influence in a same way the findings with regards to the themes investigated. However, it should be noted that the use of *combined* mixed methods could positively contribute to the improvement of the survey tool. Namely, the case studies method could have informed the content of the questionnaire resulting in the questionnaire's enhancement or development. As Moran-Ellis et al. (2006, p. 51) stressed "the qualitative component is an adjust to the quantitative, improving its depth or quality".

3.6.1 1st phase: On-line Questionnaire

An on-line questionnaire was used in an attempt to select quantitative data in relation to general and special education teachers' perceptions of co-teaching. Due to the fact that co-teaching is not implemented in every secondary mainstream school, teachers located across all areas in Greece had the opportunity to respond to this survey. The questionnaire provided a large number of teachers the opportunity to express their point of view and enabled me to make comparisons between the two groups of teachers as well as possible generalizations (Punch, 2005). Furthermore, based on the educational research literature (Punch, 2005) the survey further enhanced the objectivity of the research of the research.

With regard to the format of the questionnaire, the Google forms application was used for the creation of the on-line questionnaire. After the creation of this questionnaire, Google forms application enabled me to create a link which would give any potential survey participant access to the questionnaire.

3.6.2 Instrument

In terms of the survey research approach, data collected through a questionnaire that was given to special and general education teachers (see Appendix 3). The questionnaire consists of six sections::

The questionnaire was focused on defining the roles of general and special teachers within classroom:

- 1) In the first section (the demographic part, Questions 1-10), teacher participants were asked to report descriptive information about themselves and particularly their age, gender, years of professional experience, experience in teaching children with SEN (if any) and lastly relevant qualifications and special education training (if any).
- 2) In the second section (Question 12) co-teachers were asked to report their preparation for co-teaching in terms of seven preparatory programmes by selecting one the

following responses: Yes (1) or No (2). Also, survey respondents were asked to report their extent of agreement with regard to the utility of the above seven preparatory programs, by selecting one the following responses *Not at all Useful* (1), *Useful* (2), *Quite useful* (3) and *Very Useful* (4). This section was influenced by the corresponding sections of Fennick and Liddy's (2001) and Austin's (2001) survey tools, which were designed to investigate teachers' perceptions towards co-teaching. It should be noted, that the initial survey tools have been significantly adapted to the Greek educational reality. According to the literature (Friend et al., 2010; Budah et al., 1997; Buerck, 2010; Fennick & Liddy, 2001) training in co-teaching is considered to be a determinant factor for the successful implementation of co-teaching and for that reason this section is included in my survey tool.

- 3) In the third section (Question 12), teachers were asked to report how often they used the six co-teaching approaches that Friend et al. (2010) illustrated, by selecting one the following responses *Very often* (1), *Often* (2), *Not so often* (3) and *Never* (4). These six approaches are widely accepted within the co-teaching research community. Images were used aimed at illustrating in a better way the various approaches. These figures were taken from Friend et al.'s (2010) paper (*itself taken from Friend and Bursuck's book (2009)*).
- 4) In the fourth section (Question 13), co-teacher participants were asked to report their responsibilities within the co-taught classroom. Specifically, they were asked to report to what extent they believed the 27 items which described co-teachers responsibilities belonged either to the general education teacher or to the special education teacher or was a joint one by selection one of the above options: *General education responsibility* (1), *Mostly general education responsibility* (2), *Joint responsibility*, *Mostly special education responsibility* (4) and *Special education responsibility* (5). This section was adopted from the corresponding section of Fennick and Liddy's (2001) survey tool, which was designed to investigate teachers' perceptions of their responsibilities within the co-teaching approach. This section was adapted to the Greek educational reality (i.e. some items removed, because they are not applicable). Also, alterations to the word formulation were seen as necessary. This section of Fennick and Liddy's (2001) survey tool was selected for my research purpose because it was very detailed and categorized the items/statement into four subscales: *instruction*, *behaviour management*, *planning and evaluation*, helping me to be more accurate with regard to my conclusions.
- 5) In the fifth section (Question 14), teacher participants were asked to report whether they had mutual planning time for co-panning. At a second stage, survey respondents were also asked to report the average mutual time for co-planning that they used on a weekly basis (if any). According to the literature, the mutual time for co-planning between co-teachers is considered to be one of the crucial components for the successful implementation of co-teaching.
- 6) In the seventh section (Questions 15-16) general and special teachers expressed their opinion with regards to issues related to collaboration with their partner or their

collaborative experience with their partner. Specifically, teacher participants were firstly asked to report their extent of agreement with regard to eight recommended collaborative practices (Question 15), and secondly, with regard to eight items that described their collaborative experience participating in a co-taught classroom (Question 16). Using a five-point Likert scale, the participants were requested to report the extent to which they agreed or disagreed with the above 16 statements in total, by selecting one of the following responses: *Strongly Agree* (1), *Agree* (2), *Neutral* (3), *Disagree* (4) and *Strongly Disagree* (5). The items of this section were influenced by the research tools of Hang and Rabren (2009), Fennick and Liddy (2001), and Austin (2001), which were designed to investigate teachers' perceptions of their collaborative experience in co-teaching. It should be noted that some of the items were adapted to a Greek educational reality.

- 7) In the eighth section (Questions 17-18), teachers were asked to express their beliefs/perceptions towards the academic and social outcomes of co-teaching to children with SEN (Question 17) and to all children included in their co-taught classroom (Question 18). Using a five-point Likert scale, the participants were requested to report the extent to which they agreed or disagreed with the above 33 statements in total, by selecting one of the following responses: *Strongly Agree* (1), *Agree* (2), *Neutral* (3), *Disagree* (4) and *Strongly Disagree* (5). The items of this section have been taken from Hang and Rabren's (2009) survey tool. This is because this survey tool aimed to reveal teachers' perceptions in terms of the academic and social outcomes of co-teaching.
- 8) In the ninth section, teacher respondents were asked to report to what extent they believed that each of the fourteen items described factors influencing co-teaching contributed to the successful implementation of co-teaching. Participants were asked to report their opinion by selecting one of the following responses *Not at all important* (1), *Of limited importance* (2), *Somewhat important* (3) and *Very important* (4). These factors are based on the relevant literature and some of them were influenced by the Greek co-teaching reality (i.e. see items 12, 13 and 14).

3.6.3 A summary of the data collection effort

Pilot study

A pilot study of the research tools is considered to be a crucial stage in a research preparation, especially with regard to mixed-design methodologies (Bryman, 2008). The pilot study aimed to examine if the two methodologies are well linked. Particularly, with regard to the survey research tool, it was stressed in the literature (Bryman, 2008), that the questionnaires do not allow opportunities to participants for further clarification and explanation. Thus, the pilot study of the survey tool aimed to determine any weaknesses of the questionnaire and to check whether the questionnaire questions were explicit and understandable.

The questionnaire was piloted by two general and two special educational teachers who were working in the post of co-teacher. Feedback and comments from the pilot study indicated that it

was necessary to split one question of the demographic section into two sub-questions. Namely, the initial question: "How many children identified with SEN are included in your classroom?" was split into the following sub questions: "*How many children formally identified by KEDDY as having special educational needs do you have within your classroom?*" (See survey question no 6), and "*How many children were diagnosed as needing co-teaching in order to be included in a mainstream classroom?*" (see survey question no 6). This was because teachers felt that this question was not clear enough. For similar reasons the formation of questionnaire question no 11 was slightly changed in order to be more comprehensive to teachers participating in the survey.

Process of sending the on-line questionnaire to schools and survey participants

Before sending the on-line questionnaire to secondary schools in which co-teaching was implemented, an investigation of the secondary schools that special teachers were allocated to undertake the post of a co-teacher was considered to be crucial. At the first stage, the offices which are responsible for the operation of secondary education schools across all districts in Greece were contacted and informed about the survey aims. These offices were responsible for the operation of secondary education schools in each district and also for allocating special teachers in co-teaching classrooms. Hence, they provided the necessary information in order to identify the schools in which co-teaching was implemented. At the second stage, the e-mail addresses of the correspondent secondary schools were located in order to send the on-line questionnaire that was attached into a link.

Afterwards, for the academic year of 2014-15, an e-mail with an attached link to the survey questionnaire was sent to 373 secondary schools (including middle and high schools), in 52 districts of the total 58 districts. The exclusion of six districts from the study was due to the following reasons: at three of the above six districts the co-teaching approach was not at all implemented in any school, while the offices that were responsible for secondary education schools in the remaining three districts refused to provide information regarding implementation of co-teaching. This e-mail firstly informed school directors about the survey aims. Secondly, this e-mail asked the directors of each school to inform all the general and special education teachers of any specialism who were involved in co-taught classrooms about the aims of the present study. Afterwards, the e-mail asked the directors of each school to forward the e-mail to all co-teachers' e-mail addresses in order to voluntarily participate in the survey. Thus, teachers across the schools had access to the on-line questionnaire using a link that was attached to the email.

The questionnaire remained on-line for three months from the date that it was first sent to secondary schools. Moreover, one follow-up data collection phase was considered to be necessary. Therefore, the quantitative aspect of the study was based on a sample of 140 general and special secondary education teachers. Specifically, 88 specialized teachers and 52 general education teachers responded drawn from 52 districts of the total 58 districts across Greece.

Ethics

All the necessary attempts were made in order for the current research, which adopted a mixed design methodology, to be ethically accepted. For that reason, prior to conducting the study, I obtained the approval of the University of Exeter (Appendix 4) as well as the approval from the Greek Ministry of Education. Particularly, with regard to the on-line questionnaire, an informed consent form – as part of the e-mail – was provided to all participants (see Appendix 5). This informed consent form aimed to explain to the participants the aims of the study and the average duration of the completion of the survey questionnaire (BERA, 2011). Moreover, teacher participants were informed that:

- their involvement in the survey was voluntary
- questionnaires would be automatically submitted on-line in an attempt to ensure confidentiality
- the responses of the participants were anonymous and their name or the name of the school or information about the school they were working at was not asked, nor would it appear anywhere in the survey
- No one would see their responses except me, as a researcher
- all information would be confidential and would only be used for the research aims

Lastly, my personal information was provided in order to give the opportunity to teachers to contact me for any issues or questions raised.

3.6.4 Data analysis

To access and analyse the quantitative data, SPSS 15 for Windows was used. The method of *Descriptive statistics* was used in an attempt to analyse each section of the questionnaire. According to Punch (2005, p. 124), the analysis method of descriptive statistics helped me to be “more close to the data” and findings of the research. Specifically, tables with frequency counts, percentages, means and standard deviation scores were provided. The method of *variable reduction* was used for analysing the participant responses in relation to teachers’ specialism, teacher’s training in teaching children with SEN (Question 10), teacher’s preparation for co-teaching (Question 11) and teacher’s roles and responsibilities in their co-taught classroom (Question 13).

Also, statistical tests were conducted such as t-test and chi-square test in order to identify differences in responses in teachers’ sub groups. Comparison between the sub-groups of teachers were made aiming for a more in-depth analysis. Particularly, with regard to the survey responses in relation to teachers’ perceptions of the co-teaching outcomes to children with SEN (Question 17) and to all children included in co-taught classrooms (Question 18), a *factor analysis* was also conducted. This analysis had a supplementary role to the descriptive statistics analysis and aimed at indicating the teacher participants’ main belief domains in

relation to the co-teaching outcomes. Lastly, several graphs were used to display the teacher's responses, aiming to make the survey findings more comprehensive and clear for the readers.

Based on Bartlett, et al., (2001) one of the most important issues in relation to quantitative research is to estimate the power of statistics analysis in order to provide accurate inferences and conclusions about the survey findings (i.e. the estimation of statistical significances and relationships between groups etc.). Accordingly, the statistical power determines the alpha error (Type 1-error) and the beta error (Type 2-error) of the statistical analysis. A larger the sample size is the better for the power of the statistical analysis, which is because the statistical power is related to the sample size of the research, the α value (significance level) and the d value (effect size) (Barlett, et all, 2001). Taking into account that the sample size was $n=140$ teachers and the α value was 0.05, the effect size was estimated as $d=0.24$. Measurements revealed the power of the statistical research was 80% and therefore, the possibilities of making the Type 2-error were 20%.

3.7.1 2nd phase: Case studies' methods

During second phase, qualitative data were collected through multiple case studies. Firstly, the case-studies included observations of co-teaching pairs and children with SEN included in secondary co-teaching classrooms. Secondly, interviews with the observed co-teaching pairs and students with SEN were conducted.

Observations to teachers and students

Bearing in mind that my research aim is to investigate how co-teaching is implemented in Greek secondary schools, observations were conducted, because according to the literature (Crang & Cook, 2007) this method of data collection helped me to investigate co-teaching in real classroom circumstances. Also, observing co-teachers during the lesson gave to me the opportunity to examine directly the accurate practices that co-teachers use within classrooms and their collaboration with their partner. As Devecchi and Rouse (2010, p. 96), explain "the collaboration as human interaction should be examined to the particular environment that takes part". Also, Mastropieri et al. (2005) argued that what co-teachers are doing is related to students' success and thus, an in-depth investigation of co-teachers' actions can help to better understand and improve co-teaching practices. Similarly, observing students gave me the opportunity to examine directly their behaviour and interaction with co-teachers. Briefly, observations enhanced the objectivity of the research, because I investigated practices and behaviours directly, namely based on facts and not purely on the participants' responses and perceptions (Crang & Cook, 2007). Last but not least, observations aimed to ensure treatment integrity of teacher's practices within the observed classrooms, which is crucial when conducting research on co-teaching.

Specifically, non-participant/passive observations were conducted. This kind of observation enabled me to collect data in terms of teachers' actions and their interaction with children as

well as children with SENs' actions during everyday classroom circumstances (Crang & Cook, 2007; Mertens & McLaughlin, 2004). In addition, semi-structured observations were conducted, aiming to enhance the evidence base of my study which is reported within literature relevant to co-teaching (Crang & Cook, 2007) as a very important issue. Also this type of observations helped me to focus on the issues that I intended to observe. However, narrative data about teachers' and students' actions were also recorded through field notes. Data were also gathered with regard to co-teachers' and students' characteristics, physical environment and remarkable situations. This is because this type of unstructured observations or note taking ensured that important details were not missed.

Interviews with teachers and students

Interviews with teachers and students were conducted because they allowed me to gain an in-depth understanding of participants' beliefs. Specifically, interview with co-teachers helped me to explore in depth their perceptions of co-teaching, the meaning and the reasons they attribute to their practices, their feelings and values.

Also, by interviewing teachers helped me to clarify in depth the findings of my questionnaire, aiming to "triangulate", and to confirm the study's results using different types of data. Furthermore, the interviews aimed to "plug the gaps" of the quantitative research phase and to create a richer "picture" of the co-teaching approach (Punch, 2005, p. 242) by giving the chance to interview participants who may have different perceptions to clarify their opinions. Similarly, interviews with students with SEN helped me to explore their perceptions in terms of co-teaching and their preferences. Interviews with co-teachers and students were seen by me as a very important data collection method, because as Wellington (2000, p. 71) explained "interviewing allows a researcher to investigate and prompt things we cannot observe".

Specifically, semi-structured interviews were conducted because this type of interviews allowed me to cover specific issues with an opportunity to "follow up points as necessary" (Thomas, 2009, p. 164). Thus, further questions, which were not included in my main schedule, were addressed by "picking up on things" mentioned by participants (Bryman, 2008, p. 438). This type of interviews enabled interviewees to clarify and exemplify their point of view (Bryman, 2008). These interviews were face to face and individual with each of the co-teachers so that interviewees could express their feelings and perceptions more honestly and clearly (i.e. with regard to each other collaboration) than conducting focus group interviews for each co-teaching pair.

It is worth mentioning that some interview questions arose from observations that took part prior to conducting interviews. This gave teachers the opportunity to explain their actions and practices. Also, I had the opportunity to investigate children's' beliefs based on their behaviour and actions within their classroom. Therefore, the above mixed methods case studies helped me to investigate the perceptions and actions of both co-teachers and children and to identify possible discrepancies between perceptions and outcomes (Silva & Morgardo, 2004).

3.7.2 Instrument

Observation schedule to teachers and students

The creation of my semi-structured observation tool to teachers and students was influenced by Wilson's (2005) paper (see Appendix 6), which presented an interesting observation tool or a guided format for observing co-teachers. This tool was an outcome of the collaboration between a university and a large school district with special and general education supervisors investigating how the two disciplines looked at a co-taught lesson at the secondary level. Also, for the creation of my observation tool I was influenced by various observations tools such as Harbort et al.'s (2007), Murawski's (2006) and Budah et al.'s (1997) observation schedules, which aimed to gather data in terms of teachers' instructional actions..

This observation tool (see Appendix 7) was loosely structured, aiming to gather descriptive data with regard teachers' roles and instructional actions as well as to children with SEN's actions within co-teaching classrooms. Also, information was gathered in terms of the lesson content, teaching strategies, classroom activities and remarkable events.

Interviews with teachers and students

Bearing in mind the research aims, the interview questions were focused on teachers' perceptions of the following (see Appendix 8):

1. co-teaching as an educational programme
2. their preparation for collaborative teaching
3. their co-teaching practices
4. their roles/tasks and each other's roles
5. their collaboration with their partner
6. the problems, challenges and factors facilitating co-teaching
7. the academic and social outcomes of co-teaching
8. their suggestions for a change

Also, interview questions were addressed to teachers based on observations and noteworthy incidents.

Bearing in mind the research aims, the interview questions for students with SEN focused on their perceptions of the following (see Appendix 9):

1. preferences of co-teaching
2. social and academic outcomes of co-teaching
3. co-teaching and its arrangements
4. special co-teacher

3.7.3 A summary of data collection afford

Pilot study

The observation and interview tool were piloted with two co-teaching pairs who were teaching in two different classrooms and in different schools. The pilot study aimed to see whether the two methods of the case studies worked well together and identify possible difficulties in using the tools so that possible changes and alterations in its structure could be made (Bryman, 2008). Similarly, the pilot study for the interview questions gave information as to whether the questions were clear, open and explicit enough for providing interesting and more detailed findings.

Feedback and comments from the pilot study indicated that changes were required to the order of the sections included in my observation schedule in order to take field notes more easily. I needed to set the sections *teachers' roles, teachers' actions and lesson content* at the end of the schedule (see Appendix 8) instead of keeping these sections at the beginning of the schedule. This helped me to keep some feedback notes by ticking the appropriate box at the end of each observation. Also, by piloting the observation tool I realized that setting specific time for keeping notes for each section (i.e. ten minutes for each section) did not actually help me during the observations. Thus, based on each co-teaching classroom circumstances a more flexible time-schedule was followed. In terms of the interview questions, feedback indicated that they were clear and comprehensive and that in general, the two methods were well linked together.

Participants

The co-teacher and student participants of the case studies came from one city in Northern Greece. This city was very close to the location where I lived and worked at the academic year of 2014-15. Specifically, five case studies were conducted. Each of the case studies included two pairs of co-teachers (i.e. one special and one general teacher) who were teaching in the same classroom which included the same children with SEN (see a detailed map in Appendix 10). However, the fifth case study included only one co-teaching pair. In total, nine co-teaching pairs were observed and interviewed, namely nine general and nine special teachers. With regard to children participants, five children with SEN were observed and interviewed. These children came from each of the above five co-teaching classrooms.

Each co-teaching pair was observed for two teaching hours in total. The interview duration with each teacher ranged from thirty minutes to one hour. Lastly, the interview duration with each child was approximately twenty minutes.

Ethics

In addition to the approval of the University of Exeter and the Greek Ministry of Education (see Appendix 5) that I obtained, further attempts were made in order for the cases studies to be ethically accepted.

Firstly, each school in which co-teaching was implemented was visited and consent was gained from the head teachers, after being informed about the research aims. At a second phase, co-teachers employed in the above schools were contacted by me and asked to participate in the study. Specifically, information sheets were given to co-teachers in which they were informed about the research aims and were invited to voluntarily participate in observations and in an individual interview (see Appendix 11). These information sheets informed the teachers about specific issues in relation to the research process. Firstly, teachers were informed about the duration of observations (2-4 teaching hours) and interviews (approximately 20 minutes). Secondly, teachers were informed about the fact that they will be audio recorded during the interview process, but they were not being audio or video recorded during the observation process. Thirdly, teachers were analytically informed about the general themes/categories of the questions that the interview process would focus on. Additionally, based on the educational research literature (Bryman, 2008; Punch, 2005), in the above information sheets it was stressed that everyone had the right to refuse participation. Also, it was emphasized that the participants would be anonymous and the data would be presented in a way that does not allow any person or school to be identified. Moreover, assurances were given that the data would be analysed reliably and the findings of this research would be presented with fairness. Lastly, my personal information was provided in order to give the opportunity for teachers to contact me for any issue or question raised.

At the same time, information sheets were given to the parents of children with SEN (see Appendix 12). These sheets aimed to gather their consent and permission so that their children could participate in the research. Firstly, the parents of children with SEN were informed about the research aims and purposes. Moreover, the parents were informed about specific issues in relation to the research procedure. Firstly, they were informed about the duration of the observation (maximum 6 teaching hours in total) and interview process (approximately 10 minutes) as well as the place that the interview process will take place (within school in a classroom and after the lessons). Secondly, parents were informed that their child will be audio recorded during the interview process, but their child will not be audio or video recorded during the observation process. Thirdly, parents were analytically informed about the general themes/categories of the questions that the interview process would focus on. Fourthly, parents were informed about the possible benefits of their child's participation in the study, while there were no foreseeable risks for their child whether he/she participated or not in the study. Additionally, based on the educational research literature (Bryman, 2008; Punch, 2005), the above information sheets stressed that everyone had the right to refuse their child's participation in the study. Moreover, assurances were given to parents that their child's privacy and the confidentiality would be protected. Also, it was emphasised that anonymity would be secured and any information given would be used only for the purpose of the present study. Lastly, my personal information was provided so that parents could contact me if they wish to raise any concerns.

Added to the above informed consent forms, consent was gained from the children with SEN (see Appendix 13). Namely, information sheets were given to children with SEN. These sheets aimed to gather their consent and permission in order to be participated in the research. Specifically, using plain wording the children with SEN were informed about the research aims and procedures. Moreover, this form was seeking to ensure that children were aware of the observation and interview process that they would individually take part in. Furthermore, children were informed about the duration and the place where the interview process would take place. Furthermore, the above information sheets stressed that every child can participate in the study only if he\she wanted to and also he/she can deny answering any question they wish. Moreover, assurances were given to children that their answers will be protected and no one will be informed about them.

Lastly, information sheets were given to the parents of typically developed children in an attempt to explain the research aims and to assure them that their child would not get involved in this study at all (see Appendix 14). Moreover, parents were informed that everyone had the right to refuse their child's participation in the study. Also, parents were informed that children themselves have the right to decline to participate or to withdraw from the study at any time. In both cases, assurances were given to parents that their child's withdrawal or refusal to participate would not affect their relationship with their teachers. Furthermore, assurances were given to parents that their child's privacy and the confidentiality will be protected. Lastly, my personal information was provided in order to give the opportunity to teachers to contact me for any issue or question raised.

Particularly, ethical considerations regarding the interview and observation process have been taken into account. Firstly, pre-placement visits in schools were conducted prior to the implementation of the observations for a better description of the school's and lesson's circumstances. Data were selected in terms of children's characteristics (type of SEN, skills etc.), family status, school and classroom circumstances (teaching personnel, number of students within classroom, support services etc.) and the area in which each school was located (urban, agricultural) aiming to enhance the validity of the research. Moreover, based on the literature (Bryman, 2008), a serious attempt was made to ensure that my presence in the classroom was not a barrier for teachers to conduct their lesson (e.g. by not making noise in order not to disturb the children's attention, by sitting at the back side of the classroom).

In terms of the interview questions to teachers and students, a serious attempt was made to avoid the interview questions being personal, and not to harm the participants, or make them feel uncomfortable, pressed or annoyed (Bryman, 2008). Moreover, assurances were provided to both teachers and student participants that anonymity will be secured. Namely, teacher and student participants were informed that their responses were anonymous and their name or the name of the school or information about the school they were working/participating would not be asked nor appear anywhere in the study. Moreover, assurances were provided to both teacher and student participants that confidentiality will be secured. Namely, it was emphasized that their

responses were confidential and will only be used for the research aims. Especially, it was emphasised that teacher participants in each role would not be informed about what their co-teaching partner said or commented upon in relation to any issue. Similarly, student participants were informed that their responses or comments were confidential and no teacher would be informed about them.

Specifically, with regard to students' interview questions, a serious attempt to ensure that the language used was appropriate for the age and literacy level of students taking into account the severity of their special educational needs (Bryman, 2008). Lastly, due to the fact the interviews would be recorded, the participants were informed that only myself would hear the recordings and that parts of the interview may be presented in the thesis.

3.7.4 Data analysis

Observations

To analyse the observations data, qualitative analysis was conducted. At the first stage, basic labels or dimensions were generated in order to categorise or to segment the data into units (i.e. teachers' roles, teachers' practices, etc.; see analytically in Appendix 15). At the second stage, based on the educational research literature (Punch, 2005, p. 198) using the method of coding, "patterns, regularities and contrasts" were sought aiming to develop codes of the units of data and thus, to further analyse the data. Thus, the various codes were gathered and various sub-labels or sub-dimensions were developed under the basic labels (i.e. Teachers' roles → Leading role or supportive role, etc.; see analytically in Appendix 15).

Interviews

In terms of the analysis of the co-teachers and students interview responses a similar process with observation analysis was used. Initially, the interview responses of the co-teachers and children were translated and transcribed. Secondly, NVivo was used in an attempt to analyse the interview data. Specifically, each co-teaching pair's responses as well as each child's responses were analysed as independent NVivo projects. For the first stage, basic labels or dimensions were developed in order to categorise or to segment the data into units (i.e. Understandings of the term co-teaching, Teacher's roles, Teacher's practices etc, see analytically Appendix 16). For the second stage, based on the educational research literature (Punch, 2005, p. 198) using the method of coding, "patterns, regularities and contrasts" were sought aiming to develop codes of the units of data and thus, to further analyse the data. Thus, the various codes were gathered and various sub-labels or sub-dimensions were developed under the basic labels (i.e. Understandings of the term co-teaching → As one teach one assist, Teachers' roles → Individual help to one child or responsible for all children, etc.; (see analytically Appendix 16)). The same process was applied to student interview responses (see analytically Appendix 17). Moreover, the method of "memoing" (Punch, 2005, p. 201), namely noting down my thoughts regarding the codes and how they are combined, helped me with the analysis of the data.

Combining observations and interviews within one case study

Relations between observations and interviews' responses were found within each case study in order to provide interesting findings. Specifically, I compared and contrasted both special and general education teachers' perceptions and actions. This helped me to identify possible discrepancies between teachers' actions and perceptions as well as between general and special teachers in each co-teaching pair. The same process applied to students. Specifically, possible discrepancies were identified between their actions and perceptions. Lastly, comparisons were made between teachers' and students' interview responses within each case study in order to identify possible discrepancies between them.

Cross case analysis

In order to provide information or inferences based on all case studies, the method of cross-case analysis was used. Thus, based on the basic labels used for analysing both the interviews and observations, any similarities or differences across the cases studies were sought. Patterns and regularities were identified and comparisons across the cases were made for a more holistic analysis.

Having detailed the methodological approaches underpinning this study, this thesis will now provide the findings which the study revealed.

4. Findings

This section presents the findings of the quantitative and the qualitative aspect of the study.

Initially, the survey data findings will be presented followed by the case studies findings.

4.1 Survey results

4.1.1 Participants' profile

In terms of participants, this survey comprised of 140 teachers (see Table 4). The majority of them were special teachers (STs) ($n=88/62.9\%$) compared to general teachers (GTs) ($n=52/37.1\%$). Most of the participants ($n=79/56.4\%$) were teachers of Humanities subjects (Classics, Religious studies, English language and French language teachers), and the majority of them were Classics teachers ($n=75/53.6\%$) (see Table 2). The remaining participants ($n=61/43.6\%$) were teachers in Sciences subjects (Maths, Physics, Chemistry, Biology and Economy teachers), and the majority of them were Maths teachers ($n=28/20.8\%$). Similarly, the majority of GTs ($n=29/55.8\%$) and STs ($n=50/56.8\%$) were teachers in Humanities subjects, and in both cases of GTs ($n=25/48.1\%$) and STs ($n=50/56.8\%$) the majority of participants were also Classics teachers. By contrast, the majority of GTs of Sciences subjects were Physics teachers ($n=8/15.4\%$), while the majority of STs were Maths teachers ($n=21/23.9\%$).

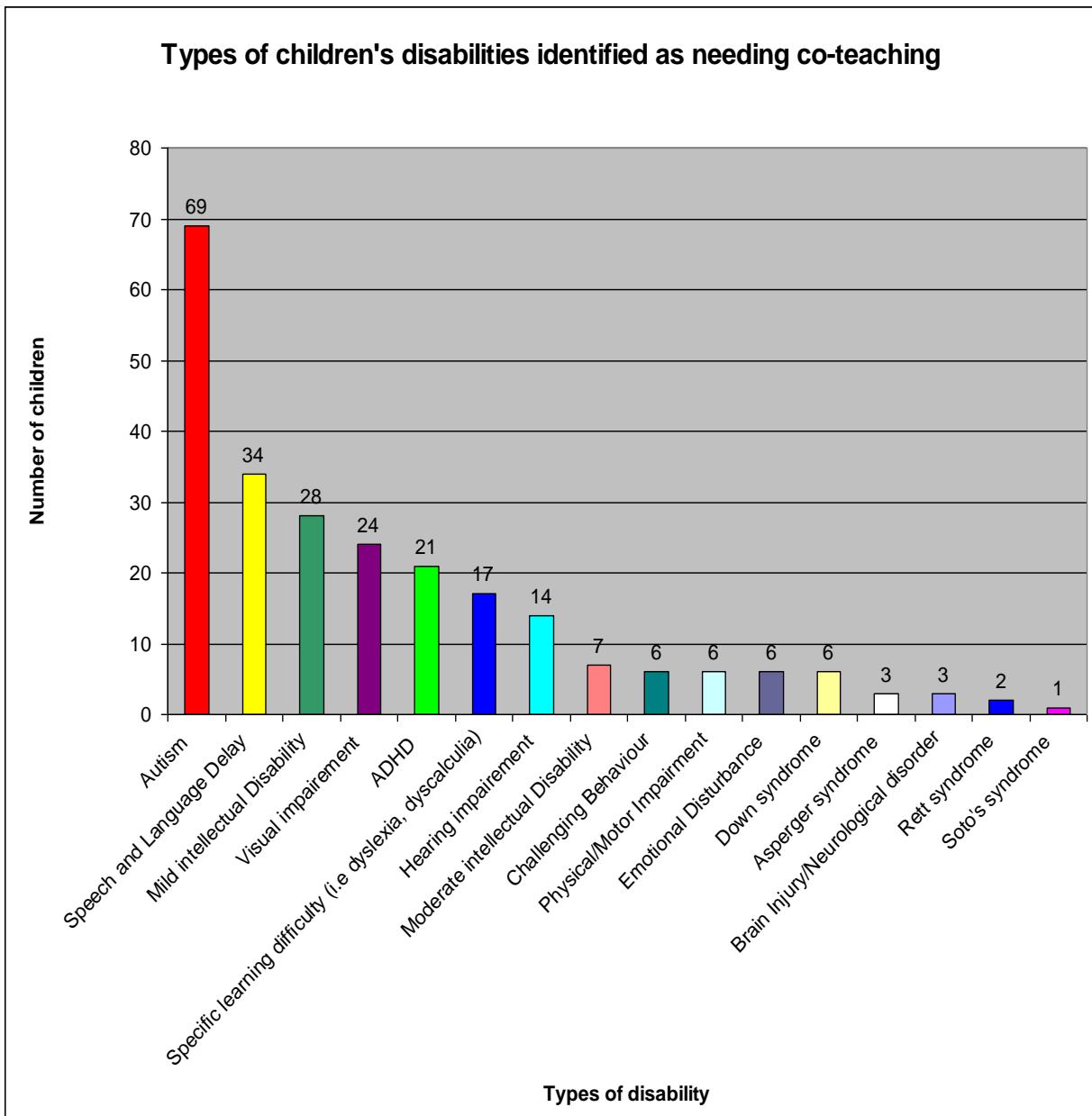
Moreover, the majority of participants were female teachers ($n=110/78.6\%$), which was also the case for GTs ($n=39/75\%$) and STs ($n=71/80.7\%$) (see Table in Appendix 18). The 140 participants of the study had a mean age of 38 years. Specifically, the GTs participants were older than STs, as they had a mean age of 45 years compared to the STs' mean age of 33 years. Participants reported that their teaching experience was on average 8 years, while the GTs seem to be more experienced in teaching ($m=14$ years) than the STs ($m=4$ years). By contrast, STs seem to be slightly more experienced in co-teaching than the GTs. This is because the reported co-teaching experience of STs was on average 2 years compared to the GTs whose mean co-teaching experience was 1.6 years.

Table 4. Participants' subject specialism

Specialism	All participants	General teachers	Special teachers	Specialism categorization	All participants	General teachers	Special teachers
Classics teachers	75 (53.6 %)	25 (48.1 %)	50 (56.8 %)	Humanities	79 (56.4 %)	29 (55.8 %)	50 (56.8 %)
Religious studies teacher	1 (0.7 %)	1 (1.9 %)	-				
English Language teachers	2 (1.4 %)	2 (3.8 %)	-				
French Language teacher	1 (0.7 %)	1 (1.9 %)	-				
Maths teachers	28 (20%)	7 (13.5 %)	21 (23.9 %)				
Physics teachers	20 (14.3%)	8 (15.4 %)	12 (13.6 %)				
Chemistry teachers	8 (5.7 %)	4 (7.7 %)	4 (4.5 %)				
Biology teachers	4 (2.9 %)	3 (5.8 %)	1 (1.1 %)				
Economy teacher	1 (0.7 %)	1 (1.9 %)	-				
Total	140 (100 %)	52 (100 %)	88 (100 %)		140 (100 %)	52 (100 %)	88 (100 %)

Regarding the total number of children identified as having SEN included in participants' classrooms, both STs and GTs reported that the average was 2 children (see Table in Appendix 19). Similarly, both STs and GTs agreed that on average one child with SEN was included in their classroom and was officially identified as needing co-teaching. According to all participants' responses, the seven most common types of SEN of children identified as needing co-teaching was Autism, speech and language delay, mild intellectual disability, visual impairment, ADHD, specific learning difficulties and hearing impairment (see Graph 1). Also, STs said that they participated on average in 2 separate classrooms per week during the academic year, while some of them mentioned that they visited a maximum of different classrooms per week (see Table in Appendix 18). Additionally, STs reported that they supported on average 3 children and interestingly, some of them mentioned that they supported a maximum of 9 children.

Graph 1. Type of children's SEN identified as needing co-teaching



4.1.2 Teachers' training in SEN

The majority of participants ($n=95/67.9\%$) stated that they had training in SEN, while the remaining teachers ($n=45/32.9\%$) reported that they have not attended any special education learning/training course (see Table 5). However, it is worth mentioning that most of GTs ($n=44/84.6\%$) did not have any training in SEN. By contrast, the STs seem to be to some degree in SEN, because almost all of them ($n=87/98.9\%$) stated that they had attended some relevant training. Interestingly, Chi-square analysis indicated that the above differences are statistically significant ($p<0.05$).

Regarding the level of participants' training in SEN, the STs seem to be highly trained in SEN, because the majority of them ($n= 52/59.8\%$) had a Masters in SEN, while the remaining STs ($n=35/40.2\%$) had attended a seminar in SEN ($n=35/40.2\%$) (see Table 6). By contrast, the GTs seem to have less training in SEN as none attended a Masters and only $n=8$ GTs (80%) attended a seminar in SEN of the total number of 10 GTs who received any SEN training. Lastly, Chi-square analysis indicated that the above differences are also statistically significant ($p<0.05$).

Table 5. Participants' training in SEN

	Yes 1	No 2	Chi-square
GT	8 (15.4 %)	44 (84.6 %)	Chi-square=104.432 Df=1 P value=0.000
ST	87 (98.9%)	1 (1.1%)	
Tot.	95 (67.9%)	45 (32.1%)	

Table 6. Level of participants' training in SEN

	Highly trained 1	Lower trained 2	In-service trained 3	Total number of teachers received any training	Chi-square	T-test
GT	0 (0%)	8 (80%)	2 (20%)	10 (100%)	Chi-square =26.577 Df=2 P Value= 0.000	T=4.907 Df= 95 P value=0.000
ST	52 (59.8%)	35 (40.2%)	0 (0%)	97 (100%)		
Tot.	52 (100%)	43 (100%)	2 (100%)	87 (100%)		

Note:

Masters in Special education, Seminar=1

Masters in Special education =1

Seminar in Special education=2

Seminar in Special education, in-service training=2

In-service training=3

Undergraduate studies in Special education, In-service training=3

4.1.3 Teacher's training in co-teaching and perceptions of its potential usefulness to co-teaching

Type of teachers' preparation in co-teaching

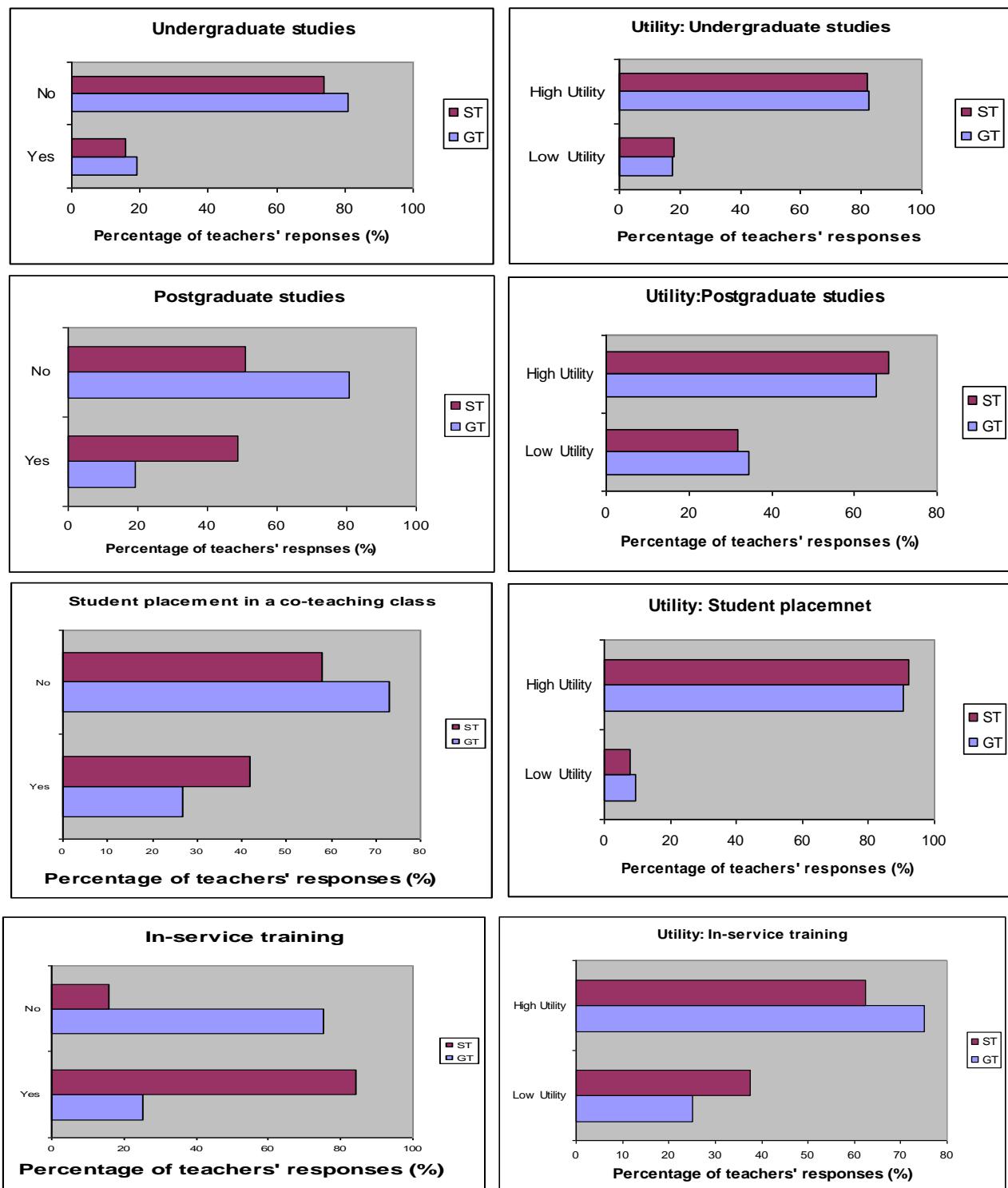
Most of both GTs (n=42/80.8%) and STs (n=74/74%) stated that they did not attend any co-teaching training during undergraduate studies (see Table in Appendix 20 or Graph 2). In terms of postgraduate studies, most GTs (n=42/80.8%) did not attend any relevant to co-teaching training. In contrast, the STs were split in two almost equal parts: almost half of them (n=43/48.9%) mentioned that they attended a relevant co-teaching postgraduate lesson/session, while the majority of STs (n=45/51.1%) stated not. Interestingly, Chi-square analysis indicated that the above results were also statistically significant ($p<0.05$).

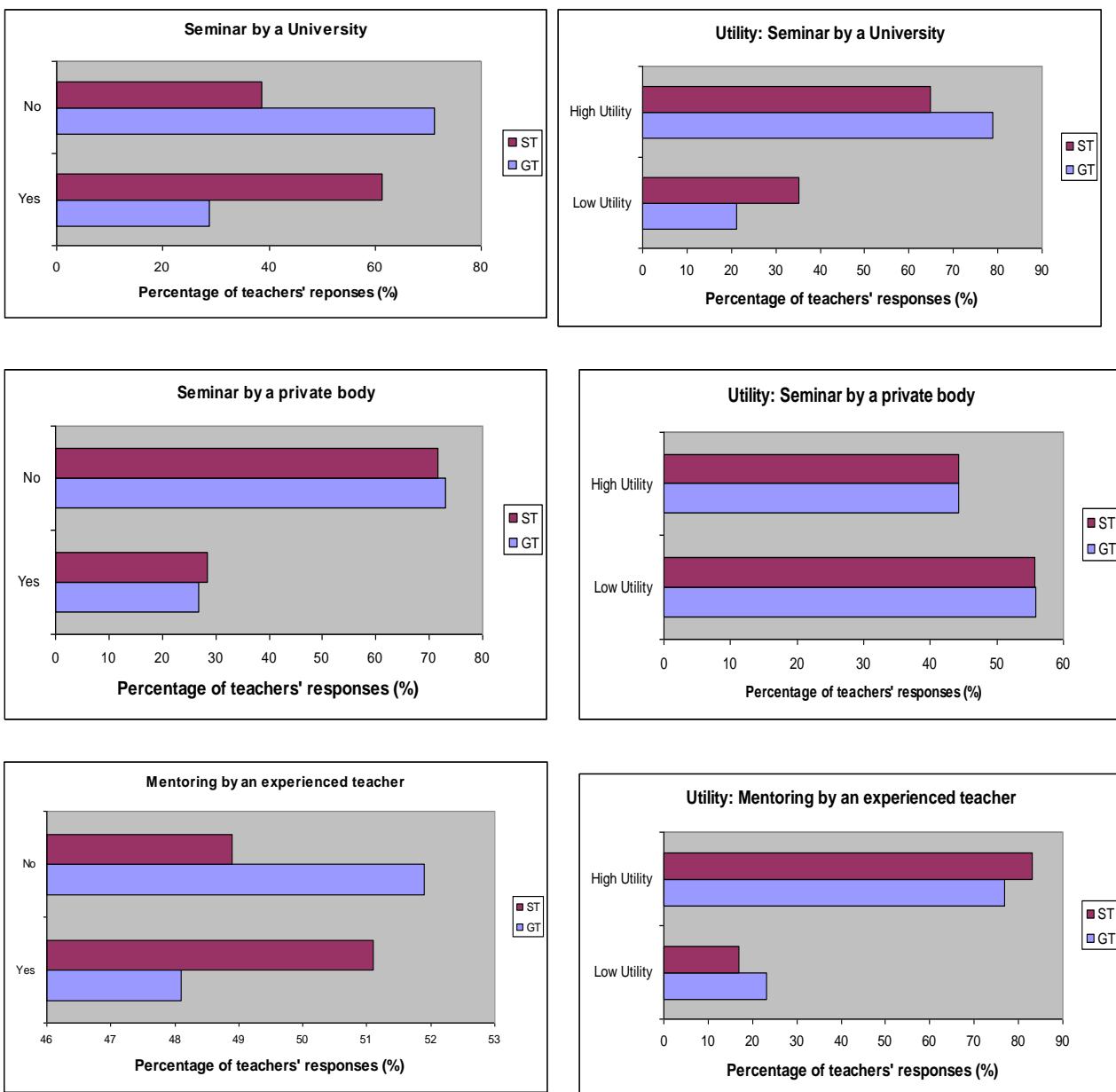
Furthermore, while most of the GTs (n=39%/75%) did not receive any in-service training in co-teaching, most of the STs (n=74/84.1%) stated that they attended this type of training. Moreover, Chi-square analysis indicated that the above results were also statistically significant ($p<0.05$). Regarding the seminar's co-teaching attendance, most of the GTs (n=37/71.2%) did not attend any seminar organised by a University, while most of the STs (n=54/ 61.4%) attended a seminar in co-teaching organised by a University. This difference was statistically significant ($p<0.05$). Moreover, most of both GTs (n=38/73.1%) and STs (n=63/71.6%) did not attend a co-teaching seminar organised by a private body.

Lastly, half of teacher participants (see Table 6) had asked for consultation from another teacher who had experience in co-teaching, while the other half stated that they did not use that kind of help. However, most of the STs (n=45/51.1%) reported that they sought advice from an experienced teacher, while most of the GTs (n=27/51.9%) stated that they had never received such help.

To sum up, it seems that the GTs were generally less informed about the co-teaching model compared to the STs, as most of the GTs did not attend any preparatory programme (see Table 6 or Graph 6). However, the GTs were prepared to co-teach mostly by mentoring by an experienced teacher (48.1%); secondly, by attending a seminar organised by a University (28.8%) and thirdly by attending a seminar organised by a private body (26.9%). By contrast, the majority of STs were prepared to undertake the post of co-teacher by attending mostly two preparatory programmes; namely, an in-service training (84.1%) and a seminar organised by University (61.4%) and also by mentoring by an experienced teacher (51.1%). It seems that the GTs found informal ways to gain preparation in co-teaching i.e., by receiving advice/consultation by a teacher, while the STs benefited from more formal preparation i.e., in-service training, provided by the Ministry of Education.

Graph 2. Participants' training in co-teaching and perceptions of its potential usefulness





Level of utility for each type of preparation in co-teaching

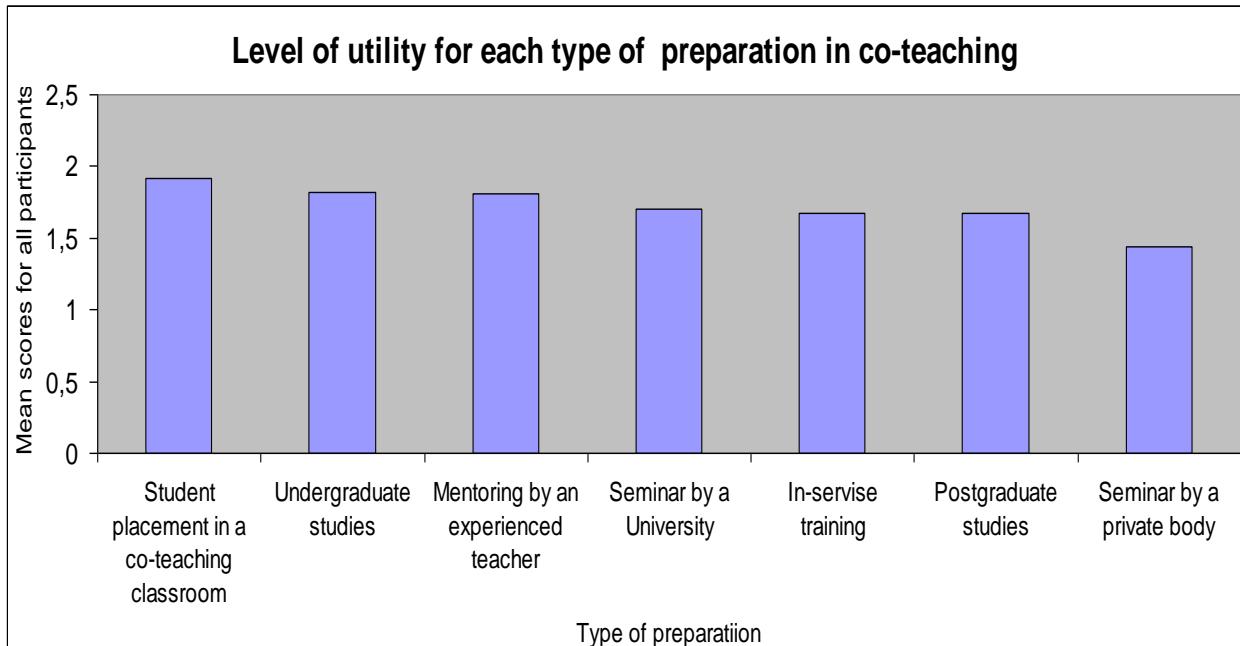
Participants' responses regarding the level of their perceived utility of seven different preparatory co-teaching programmes revealed some remarkable results (see full table in Appendix 20). Initially, all the respondents reported that all the above types of preparation in co-teaching are useful except only one, namely the *seminars organised by a private body*. This is because most of the GTs and STs expressed the above view (see Graph 3 or full table in appendices 19).

Moreover, on average all respondents saw the *student placement in a co-teaching classroom* and secondly the *training during undergraduate studies* as the two most useful ways of receiving preparation in co-teaching (see Graph 3), despite the fact that the majority of them did not attend any of the above preparatory programmes. Moreover, the respondents saw the *consultation by an experienced teacher (mentor) in co-teaching* and the *seminar organised by the university* as the third and the fourth respectively most useful ways of receiving preparation

in co-teaching. Subsequently, teachers reported to the same extent that the *in-service training* and the *training during postgraduate studies* would not help them very much for co-teaching. Lastly, teacher participants viewed *the seminars organised by a private body* as the least useful way to learn about co-teaching.

Graph 3. Level of utility for each type of co-teaching preparation in a descending order of means scores for all participants

Note: The higher the score, the higher the level of utility is perceived

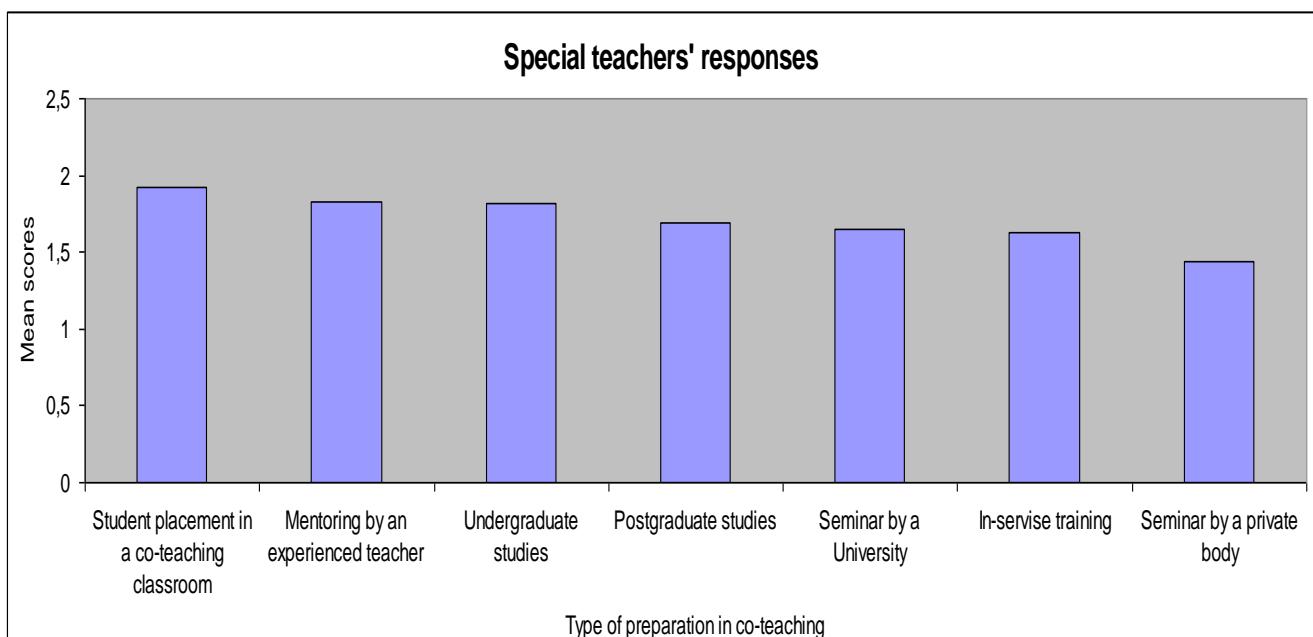
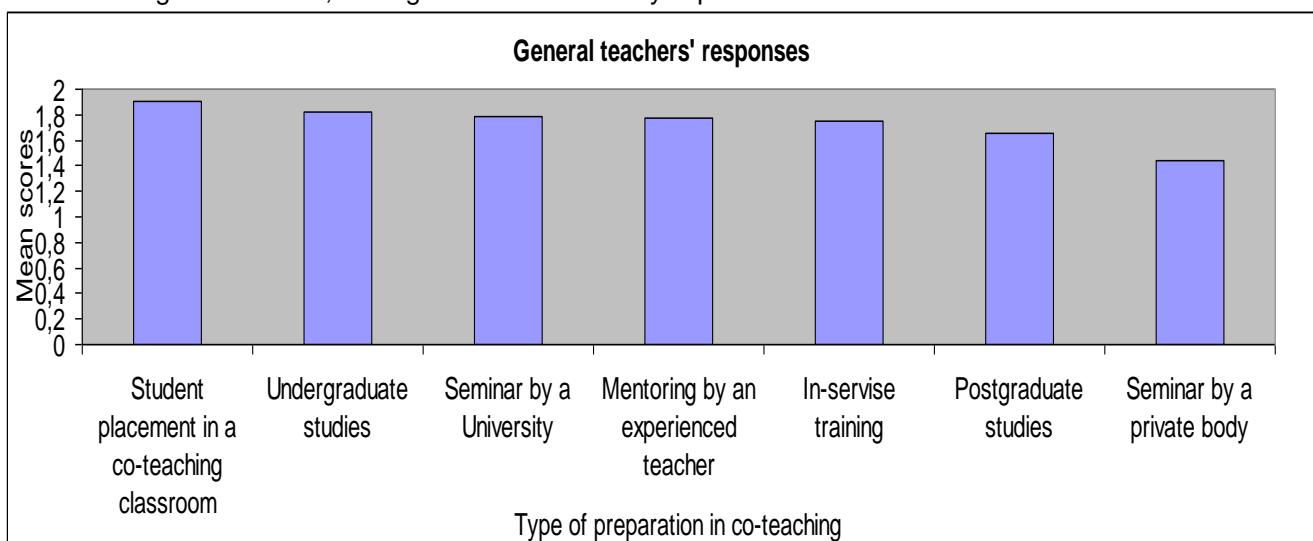


However, comparison between the GTs' and STs' responses indicated some interesting results regarding the order of their perceived utility for each type of preparation in co-teaching (see Graph 4). On average, both GTs and STs saw that the most useful way to get prepared for co-teaching was *a student placement in a co-teaching classroom*. This probably reveals that the GTs and STs placed a high value on student placement in a co-teaching classroom. Consistent with the above argument, the second most useful way for preparation in co-teaching perceived by the STs was the *consultation by an experienced teacher (mentor) in co-teaching*, while the GTs believed that *attending a lesson/session in co-teaching during undergraduate studies* would help them very much. Interestingly, it seems that STs also believed that undergraduate co-teaching training would be beneficial, because they viewed it as the third most useful way of co-teaching preparation. This is a noteworthy finding if we consider that, both GTs and STs did not have any co-teaching training during their undergraduate studies and any student placement in co-teaching classroom. Thus, they viewed that they needed so or they should have got such training. From the GTs' perspective the third most useful kind of co-teaching training would be the *attendance of seminars in co-teaching organised by a University*.

Furthermore, both GTs and STs agreed that the *attendance at seminars in co-teaching organised by a private body* was the least useful type of getting preparation in co-teaching (see Graph 4). This probably indicates that both groups of teachers did not value the role of any private body in training process and probably perceived more benefit in attending public sector seminars, such as those organised by the Greek Universities. Strikingly, the GTs believed that the *attendance of sessions during postgraduate studies* would not significantly help them in co-teaching as they saw it as the second least useful type of preparation. By contrast, the STs saw the *in-service training* as the second least efficient preparation for co-teaching, probably expressing their disappointment about the implementation of this kind of training, while the GTs viewed this as the third least useful type of preparation.

Graph 4. Level of Utility for each type of co-teaching preparation in a descending order of means scores for general teacher and special teacher participants

Note: The higher the score, the higher the level of utility is perceived



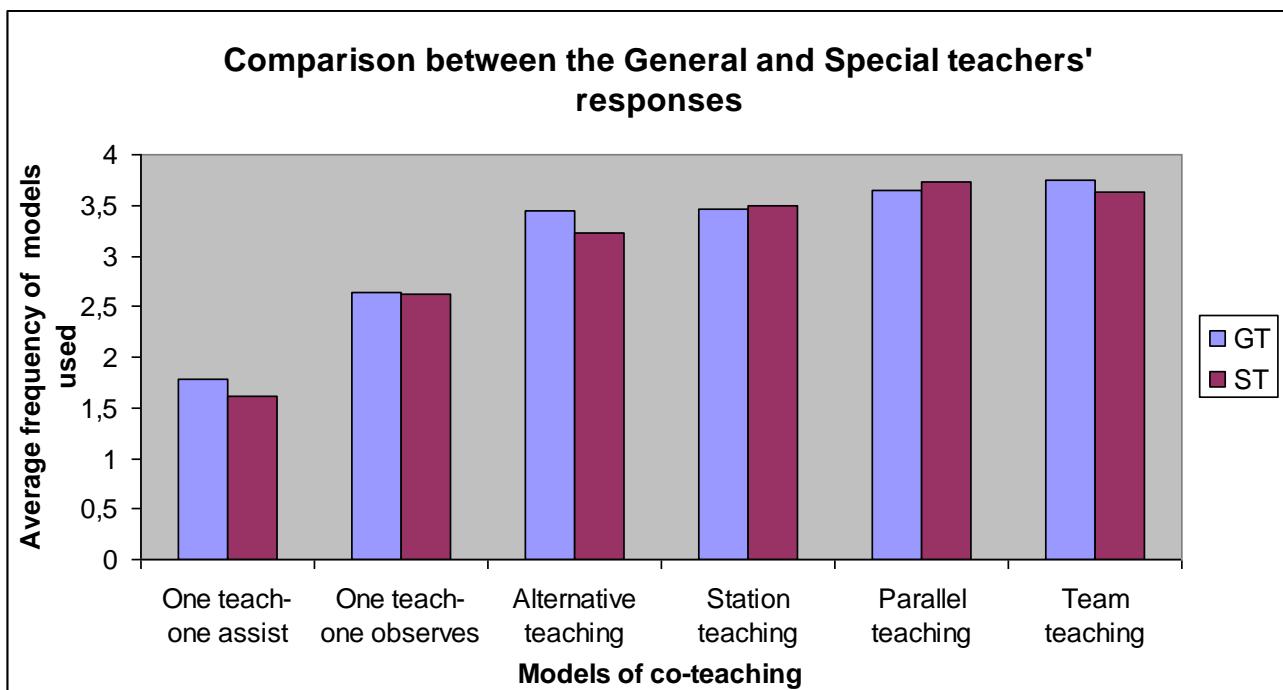
4.1.4 Models of co-teaching used by participants

The most commonly used model of co-teaching was the model “*One teach one assist*”. This was because the majority of teacher participants stated that they used the above model very often or often ($m=1.68/SD=0.96$) (see Table in Appendix 20). The second most commonly used co-teaching model was the “*One teach one observe*” ($m=2.63/SD=1.12$) followed by the model of “*Alternative teaching*” ($m=3.31/SD=0.94$). By contrast, the least commonly used models of co-teaching were the model of “*Team teaching*” ($m=3.67/SD=0.72$) as the majority of teacher participants ($m=3.67/SD=0.72$), including both GTs ($m=3.75/SD=0.62$) and STs ($m=3.62/SD=0.78$), mentioned that they never used this model. The second least used co-teaching model was the model of “*Parallel teaching*” ($m=3.70/SD=0.68$) and subsequently the model of “*Station teaching*” ($m=3.49/SD=0.68$).

Moreover, both groups of GTs and STs agreed about the frequency of the various co-teaching models implementation, with one exception. Specifically, both of them viewed that the three most commonly used co-teaching models were the “*One teach one assist*”, followed by the “*One teach one observes*” and the “*Alternative teaching*” (see Graph 5). However, while the GTs saw that the least commonly used co-teaching model was the “*Team teaching*” followed by the “*Parallel teaching*”, the STs reported exactly the opposite (see Graph 5). However, t-test analysis did not reveal that there was any significant difference in means scores between the GTs and STs in any item (see Table in Appendix 20).

Graph 5. Comparison between General and Special teacher's responses with regards to the frequency of the co-teaching models used

Note: The lower the score, the more frequently the model was used



4.1.5 Teachers' roles and responsibilities

Responses to 27 statements/items of the questionnaire indicated teachers' perceptions of their roles and responsibilities. Analysis revealed some interesting results (see full Table in Appendix 21), which were separated in two tables reflecting *Responsibilities oriented to all children* (see Table 7) and *Responsibilities oriented to children with SEN* (see Table 8).

Both GTs and STs agreed that the general teacher's role included responsibilities oriented to all children (see Table 1). Specifically, most of both GTs and STs saw the GTs as responsible for *working with any students in the co-teaching class* (item 1), *working with any student's behaviour difficulties* (item 4) and *informing all students' parents about their progress* (item 16). Chi-square analysis indicated that the above results were also statistically significant (see items 1, 4 and 16, $p<0.05$). Moreover, most of both GTs and STs reported that the GT's role included various responsibilities in relation to teaching all children in the co-teaching classroom, such as *teaching learning strategies/skills to all class* (item 5), *selecting teaching methods* (item 6), *selecting instructional technology* (item 10), *planning daily the lesson content* (item 11), *presenting the new lesson content* (item 12). Furthermore, both GTs and STs mentioned that the GT was responsible for conducting activities in the co-teaching classroom and for the way these activities would be implemented. This is because most of GTs and STs saw the GTs as responsible for *selecting activities in the classroom* (item 17), *grouping all children in the classroom* (item 7) and *arranging the physical classroom environment* (item 15). Additionally, most in both groups of teachers saw the GTs as responsible for *grading* (item 13) and *monitoring the progress of any student* (item 2), *for knowing the strengths and weaknesses of any student* (item 3) as well as *setting rules for students' behaviour* (item 8) and *assigning work to all students* (item 14). Finally, a large percentage of teacher participants (86%) saw that the GT had the *leading role in the co-teaching classroom*, while only 14% of teachers viewed that this role was a common responsibility.

By contrast, both GTs and STs saw some of the responsibilities oriented to children with SEN as belonging exclusively to the STs (see Table 2, items 1-5), while some others (see items 6-10) as being a common one. Specifically, most of both GTs and STs viewed the STs as responsible for *suggesting goals and objectives for students with SEN* (item 2), *for adapting the lesson/material for students with SEN* (item 3), *for working with students with SEN* (item 4) and *monitoring/working with their behaviour problems* (item 5). Notably, most of the GTs and STs reported that *withdrawal of children with SEN out of classroom* (item 1) was included in the ST's responsibilities, while only 22% of all participants stated that this practice was not applicable at all. Nonetheless, most of GTs and half of STs viewed the responsibility of *meeting with parents of children with SEN* (item 7) as being a common one. Also, chi-square analysis showed that the teachers' responses were statistically significant ($p<0.05$). Similarly, most of both GTs and STs saw the responsibility of *monitoring progress of children with SEN* (item 8) and *knowing their strengths and weaknesses* (item 9) as being a common one. Furthermore, while a significant proportion of both GTs (39%) and STs (42%) saw that the *assignment of work to students with SEN* (item 6) as being a common responsibility, a remarkable percentage of both GTs (32%) and STs (41%) viewed this as including within the ST role. Interestingly, while the

majority of GTs (37%) reported that *the grading of children with SEN* (item 10) included in their own responsibilities, the majority of STs (48%) disagreed with GTs because they saw this responsibility as being a common one.

Table 7. Responsibilities oriented to all children

Responsibilities	1 Responsibility more GT	2 Joint responsibility	3 Responsibility More ST	Chi-square
1. Work with any students in the co-teaching class	GT 51 (98.1%)	0	1 (1.9%)	Chi-square=8.187 Df=2 P value=0.017
	ST 73 (83%)	12 (13.6%)	3 (3.4%)	
	Tot. 124 (88.6%)	12 (8.6%)	4 (2.9%)	
2. Monitor progress of any students	GT 46 (88.5%)	4 (7.7%)	2 (3.8%)	Chi-square=5.608 Df=2 P value=0.061
	ST 73 (83%)	15 (17%)	0	
	Tot. 119 (85%)	19 (13.6%)	2 (1.4%)	
3. Know strengths and weaknesses of any students	GT 42 (80.8%)	9 (17.3%)	1 (1.9%)	Chi-square=1.535 Df=2 P value=0.464
	ST 64 (72.7%)	23 (26.1%)	1 (1.1%)	
	Tot. 106 (75.7%)	32 (22.9%)	2 (1.4%)	
4. Monitor/Work with any student's behaviour problems	GT 43 (82.7%)	8 (15.4%)	1 (1.9%)	Chi-square=8.347 Df=2 P value=0.015
	ST 52 (59.1%)	32 (36.4%)	4 (4.5%)	
	Tot. 95 (67.9%)	40 (28.6%)	5 (3.6%)	
5. Teach learning strategies and study skills to the class	GT 39 (75%)	13 (25%)	0	Chi-square=5.315 Df=2 P value=0.070
	ST 52 (59.1%)	31 (35.2%)	5 (5.7%)	
	Tot. 91 (65%)	44 (31.4%)	5 (3.6%)	
6. Select teaching methods	GT 32 (61.5%)	18 (34.6%)	2 (3.8%)	Chi-square=1.000 Df=2 P value=0.607
	ST 47 (53.4%)	38 (42.3%)	3 (3.4%)	
	Tot. 79 (56.4%)	56 (40%)	5 (3.6%)	
7. Group the children within classroom	GT 40 (76.9%)	11 (21.2%)	1 (1.9%)	Chi-square=3.376 Df=2 P value=0.185
	ST 60 (68.2%)	28 (31.8%)	0	
	Tot. 100 (71.4%)	39 (27.9%)	1 (0.7%)	

8. Set rules for student behaviour	GT	38 (73.1%)	13 (25%)	1 (1.9%)	Chi-square=3.681 Df=2 P value=0.159
	ST	51 (58%)	36 (40.9%)	1 (1.1%)	
	Tot.	89 (63.5%)	49 (35%)	2 (1.4%)	
9. Leads in a co-taught classroom	GT	46 (88.5%)	6 (11.5%)	-	Chi-square=0.510 Df=1 P value=0.475
	ST	74 (84.1%)	14 (15.9%)	-	
	Tot.	120 (85.7%)	20 (14.3%)	-	
10. Select instructional technology for the class	GT	35 (67.3%)	15 (28.8%)	2 (3.8%)	Chi-square=3.808 Df=2 P value=0.149
	ST	45 (51.1%)	40 (45.5%)	3 (3.4%)	
	Tot.	80 (57.1%)	55 (39.3%)	5 (3.6%)	
11. Plan daily the content of the lesson	GT	37 (71.2%)	14 (26.9%)	1 (1.9%)	Chi-square=0.160 Df=2 P value=0.923
	ST	64 (72.7%)	23 (26.1%)	1 (1.1%)	
	Tot.	101 (72.1%)	37 (26.4%)	2 (1.4%)	
12. Present/teach new content within classroom	GT	43 (82.7%)	7 (13.5%)	2 (3.8%)	Chi-square=1.195 Df=2 P value=0.550
	ST	76 (86.4%)	11 (12.5%)	1 (1.1%)	
	Tot.	119 (85%)	18 (12.9%)	3 (2.1%)	
13. Grade/evaluate all students	GT	47 (90.4%)	3 (5.8%)	2 (3.8%)	Chi-square=1.340 Df=2 P value=0.512
	ST	80 (90.9%)	7 (8%)	1 (1.1%)	
	Tot.	127 (90.7%)	10 (7.1%)	3 (2.1%)	
14. Assign work to all students	GT	47 (90.4%)	5 (9.6%)	-	Chi-square=0.353 Df=1 P value=0.552
	ST	82 (93.2%)	6 (6.8%)	-	
	Tot.	129 (92.1%)	11 (7.9%)	-	
15. Arrange the physical classroom environment	GT	31 (59.6%)	20 (38.5%)	1 (1.9%)	Chi-square=2.071 Df=2 P value=0.355
	ST	58 (65.9%)	30 (34.1%)	0	
	Tot.	89 (63.6%)	50 (35.7%)	1 (0.7%)	
16. Meets and informs all students' parents about their progress and behaviour	GT	46 (88.5%)	3 (5.8%)	3 (5.8%)	Chi-square=6.493 Df=2 P value=0.039
	ST	86 (97.7%)	2 (2.3%)	0	
	Tot.	132 (94.3%)	5 (3.6%)	3 (2.1%)	
17. Select activities within classroom	GT	35 (67.3%)	15 (28.8%)	2 (3.8%)	Chi-square=3.674 Df=2 P value=0.159
	ST	58 (65.9%)	30 (34.1%)	0	
	Tot.	93 (66.4%)	45 (32.1%)	2 (1.4%)	

Table 8. Responsibilities oriented to children with SEN

Responsibilities	1 Responsibility more GT	2 Joint responsibility	3 Responsibility More ST	4 Not Applicable	Chi-square
1. Take students identified as having SEN out for help <i>If not applicable please note no. 6</i>	GT 1 (1.9 %)	4 (7.7%)	32 (61.5%)	15 (28.8%)	Chi-square=2.555 Df=3 P value=0.465 <i>*Without the option "Not applicable"</i> Chi-square=0.415 Df=2 P value=0.813
	ST 2 (2.3%)	11 (12.5%)	59 (67%)	16 (18.2%)	
	Tot. 3 (2.1%)	15 (10.7%)	91 (65%)	31 (22.1%)	
2. Suggest goals & objectives for the IEP of students with disabilities	GT 2 (3.8%)	20 (19.3%)	30 (57.1%)		Chi-square=0.395 Df=2 P value=0.821
	ST 2 (2.3%)	32 (36.4%)	54 (61.4%)		
	Tot. 4 (2.9%)	52 (37.1%)	84 (60%)		
3. Adapt lessons, materials for students with disabilities	GT 4 (7.7%)	18 (34.6%)	30 (57.7%)		Chi-square=3.684 Df=2 P value=0.158
	ST 6 (6.8%)	18 (20.5%)	64 (72.7%)		
	Tot. 10 (7.1%)	36 (25.7%)	94 (67.1%)		
4. Work with students with disabilities in the co-teaching class	GT 2 (3.8%)	20 (38.5%)	30 (57.7%)		Chi-square=0.395 Df=2 P value=0.821
	ST 2 (2.3%)	32 (36.4%)	54 (61.4%)		
	Tot. 4 (2.9%)	52 (37.1%)	84 (60%)		
5. Monitor/Work with behaviour problems of students with disabilities	GT 1 (1.9%)	21 (40.4%)	30 (57.7%)		Chi-square=0.564 Df=2 P value=0.754
	ST 1 (1.3%)	31 (35.2%)	56 (63.6%)		
	Tot. 2 (1.4%)	52 (37.1%)	86 (61.4%)		
6. Assign work to students with SEN	GT 15 (28.8%)	20 (38.5%)	17 (32.1%)		Chi-square=2.810 Df=2 P value=0.245
	ST 15 (17%)	37 (42%)	36 (40.9%)		
	Tot. 30 (21.4%)	57 (40.7%)	53 (37.9%)		
7. Meets and informs the parents of disabled students about their progress and behaviour	GT 0 (69.2%)	36 (30.8%)	16 (30.8%)		Chi-square=6.597 Df=2 P value=0.037
	ST 5 (5.7%)	44 (50%)	39 (44.3%)		
	Tot. 5 (3.6%)	80 (57.1%)	55 (39.3%)		
8. Monitor progress of students with disabilities	GT -	37 (71.2%)	15 (28.8%)		Chi-square=0.603 Df=1 P value=0.437
	ST -	57 (64.8%)	31 (35.2%)		
	Tot. -	94 (67.1%)	46 (32.9%)		

9. Know strengths and weaknesses of students with disabilities	GT	1 (1.9%)	35 (67.3%)	16 (30.8%)	Chi-square=3.524 Df=2 P value=0.172
	ST	2 (2.3%)	45 (51.1%)	41 (46.6%)	
	Tot.	3 (2.1%)	80 (57.1%)	57 (40.7%)	
10. Grade/evaluate students with SEN	GT	22 (42.3%)	19 (36.5%)	11 (21.2%)	Chi-square=2.925 Df=2 P value=0.232
	ST	25 (28.4%)	42 (47.7%)	21 (23.9%)	
	Tot.	47 (33.6%)	61 (43.6%)	32 (22.9%)	

4.1.6 Regularly scheduled planning time and total number of co-planning time per week

It seems that teacher participants, on the whole, did not co-plan the lesson content given that a high percentage of participants ($n=118/84.3\%$), hence the majority of both GTs ($n=47/90.4\%$) and STs ($n=71/80.7\%$) stated that they did not have regularly scheduled planning time during the school day (see Table 9). Chi-square analysis showed that there was not any statistically significant difference between the GTs' and STs' responses.

Moreover, the GTs and STs who stated that they co-plan the lesson content with their partner had different opinions with regards to the total number of hours that they and their partners devote to co-planning. Namely, the GTs mentioned that they co-plan with their partner on average 1.5 hours per week, while the STs stated that their co-planning time was on average 2.2 hours per week (see Table 9, means scores).

Table 9. Regularly scheduled planning time and total number of co-planning time per week

	Yes 1	No 2	Chi-square	Minimum	Maximum	Means/sd
GT	5 (9.6%)	47 (90. 4%)	Chi-square =2.323	0	3	1.5/ 1.049
ST	17 (19.3%)	71 (80.7%)	Df=1 P value =0.127	0	5	2.235/ 1.522
Tot.	22 (15.7%)	118 (84.3%)		0	5	2.044/ 1.429

4.1.7 Teachers' perceptions towards recommended collaborative practices

Participants' perceptions regarding eight recommended collaborative practices revealed some interesting results (see total mean scores in full table in Appendix 22). Mostly, on average all teachers reported that co-teachers need to *clearly allocate their roles and responsibilities* (item 6). Secondly, they believed that co-teachers need *officially scheduled planning time* (item 1) and specifically, they need to meet *on a weekly basis* in order to co-plan the lesson (item 3), while both groups expressed slightly positive views towards co-planning on a *daily basis* (item 2). Moreover, the participants expressed slightly positive views about the sharing of the responsibilities of *classroom teaching* (item 5) and *classroom management* (item 4). Lastly, the respondents were mostly either slightly positive or quite sceptical regarding the special

teacher's role expansion to all children (item 7) and the withdrawal of children with SEN out of classroom (item 8).

However, comparison between the mean scores of GTs' and STs' responses in each of the above collaborative practices showed that teachers either expressed similar views (see mean scores for items 1,2,3 and 6) or disagreed with each other (items 4, 5, 7 and 8). Both groups of teachers agreed that co-teachers need a clear establishment of their roles and common lesson planning. Specifically, on average both GTs and STs agreed that co-teachers need to clearly allocate their responsibilities, expressing also very positive views about this issue (item 6). Surprisingly, T-test analysis ($p<0.05$) showed that GTs were more positive towards the above practice than the STs. Furthermore, both GTs and STs agreed that co-teachers need officially scheduled planning time (item 1) on a weekly basis (item 3) and not so much on a daily basis as both group of teachers expressed slightly positive views towards a daily planning period time (item 2).

However, the GTs and STs expressed statistically significant different views regarding practices that are related to the special teachers' role expansion to all children/classroom (see items 4, 5 and 7, $p<0.05$). Specifically, while the STs believed that co-teachers should share the classroom management, the GTs expressed slightly positive views about this (item 4). Similarly, while the STs expressed slightly positive views about the sharing of classroom instruction by both co-teachers, the GTs were slightly negative regarding this (item 5). Moreover, while the STs expressed slightly positive views about the STs' role expansion to all students, the GTs expressed slightly negative views about this (item 7). Therefore, the GTs seem to be more negative about the sharing various classroom responsibilities compared to the STs.

Lastly, it is worth mentioning that, the GTs and STs expressed statistically significant different views about the practice of withdrawal children with SEN out of class (item 8, $p<0.05$). Namely, while the STs expressed slightly positive views about the above practice, the GTs expressed slightly negative views. Considering that the majority of respondents (up to 70%) mentioned that they used the approach of withdrawal out of classroom for pupils with SEN, the above finding was an interesting one, raising also questions which can be investigated through the case study data.

4.1.8 Teachers' perceptions of their collaborative experience and their participation in a co-taught classroom

Responses to eight statements aimed at indicating participants' perceptions towards their collaborative experience. The analysis revealed some interesting results (see full table in Appendix 23). Comparison between the mean scores of GTs' and STs' responses in each item showed that teachers either expressed similar views (see items 1, 4, 5, 7 and 8) or disagreed with each other (items 2, and 6). Specifically, both GTs and STs expressed slightly positive views about their *collaboration with their partner* (item 1) and their *participation in a co-taught classroom*.

class (item 8). With regards to the potential personal benefits of the collaborative experience to teachers themselves, both GTs and STs expressed slightly positive views about *the improvement of their professional development* as a result of co-teaching (item 5) and the potential *benefits of getting feedback by their partner* (item 7). With regards to the teachers' potential problems during their collaborative experience, both GTs and STs slightly disagreed that the *different experience* (item 4) and *knowledge background* in teaching children with SEN (item 3) had a negative impact on their collaboration with their partners. Particularly, with regards to the potential negative impact of the different knowledge background to teachers' collaboration the GTs expressed more negative views than the STs (see item 3, $p<0.05$).

However, the GTs and STs seem to slightly disagree with each other in relation to the extent to which co-teaching was a worthwhile professional experience (item 6). This is because, while the STs viewed co-teaching as a valuable experience, the GTs expressed slightly positive views about this. Moreover, while the GTs believed that *they did more than their partner*, the STs reported the opposite and this difference was also statistically significant (item 2, $p<0.05$). Therefore, they both agreed that the responsibilities were not equally allocated and that the GTs had more responsibilities than the STs.

4.1.9 Outcomes of co-teaching

Outcomes for children with SEN

Responses to 22 statements/items of the questionnaire aimed at indicating teachers' perceptions of the co-teaching outcomes to children with SEN. Analysis revealed some interesting results (see full Table in Appendices 24), which were set in an ascending order of means scores for all participants (see Table 10).

Teacher participants expressed their agreement in relation to the first four statements (see Table 9). On average all teachers saw that co-teaching entailed some positive social benefits to children with SEN, such as the *reinforcement of their social skills* (item 1), *the development of their positive feelings about themselves as capable learners* (item 2) and *the promotion of their sense of belonging in classroom community* (item 3). At an academic level, the respondents reported that co-teaching helped children with SEN to *learn new ways to cope with their exercises/homework* (item 4). Also, T-test analysis showed that the STs were more positive compared to the GTs in three of the above four items (see $p<0.05$, items 1, 3 and 4)

Teachers expressed slightly positive views in relation to statements 5-12. Specifically, the participants were slightly positive towards some potential academic and personal outcomes of co-teaching to children with SEN, such as the *improvement of their academic learning* (item 6), the *better awareness of their weaknesses and strengths* (item 7). Also survey respondents expressed slightly positive views about some potential social outcomes of co-teaching, such as the enhancement of children's with SEN *interest in participating in learning activities* (item 8) and *in team-work activities* (item 11) as well as the *enhancement of their social acceptance by their peers* (item 9) and their *interaction with their peers during break time* (item 10), while they

disagreed that co-teaching resulted in, regarding children with SEN, *elimination of their social interaction with their peers during lesson time* (item 12).

On the other hand, teachers expressed slightly negative views in relation to the statements 13-18. Specifically, teachers were slightly negative towards the potential negative impact of co-teaching to children with SEN's *adjustment to the academic expectations of a mainstream classroom* (item 13), to their *interaction with their peers during lesson time* (item 14) and to their *engagement with learning activities* (item 15). Also, teachers slightly disagreed with the idea that co-teaching undermined *children with SEN's concentration* (item 16) and *interaction with their peers* during break time (item 17). Lastly, teachers slightly disagreed that co-teaching resulted in children with SEN *being labelled negatively by their peers* (item 18).

Lastly, teachers expressed their disagreement in relation to the statements 16-22. Specifically, on average teachers did not see that co-teaching undermined their *self-esteem* (item 20) and *their self-confidence* (item 21). Moreover, teachers did not view that co-teaching resulted in children with SEN *displaying challenging behaviour* (item 22), nor did they see that co-teaching *interrupted their social relationships with other children* (item 19).

Table 10. Outcomes co-teaching to children with SEN in an ascending order of mean scores for all participants

Note 1: Based on the Likert scale (*strongly agree* (1)-(5) *strongly disagree*), the lower the score the greater the extent of agreement is expressed

Note 2: Statements in which the GTs' and STs' responses are statistically significant different were highlighted in bold

Outcomes	ALL (Means/Sd)	GT (Means/Sd)	ST (Means/Sd)	T-test
1. Reinforcing their social skills (i.e. communication, cooperation, interpersonal relationships)	1.879 0.809	2.058 0.916	1.773 0.723	T=2.037 DF=138 P value=0.044
2. Increasing positive feelings about themselves as capable learners	1.929 0.801	2.000 0.817	1.886 0.794	T=0.810 DF=138 P value=0.420
3. Promoting the sense that they belong in classroom community	1.936 0.815	2.154 0.894	1.807 0.741	T=2.478 DF=138 P value=0.014
4. Learning new ways to cope with their exercises/homework	2.043 0.757	2.327 1.875	1.875 0.724	T=3.551 DF=138 P value=0.001
5. Being better able to control their behaviour	2.071 0.837	2.231 0.942	1.977 0.758	T=1.745 DF=138 P value=0.083
6. Improving their academic learning	2.129 0.821	2.231 0.783	2.068 0.841	T=1.133 DF=138 P value=0.259
7. Understanding better their weaknesses and their strengths	2.150 0.813	2.173 0.879	2.136 0.776	T=0.257 DF=138 P value=0.797
8. Becoming more interested in participating in learning activities	2.221 0.922	2.192 0.971	2.239 0.897	T= -0.286 DF=138 P value=0.775
9. Being socially accepted by their peers	2.243 0.804	2.308 0.805	2.205 0.805	T=0.733 DF=138 P value=0.465
10. Interacting more with their peers during break time	2.264 0.986	2.423 1.054	2.171 0.937	T=1.470 DF=138

				P value=1.144
11. Promoting their participation in teamwork activities	2.271 1.038	2.423 0.977	2.182 1.067	T=1.333 DF=138 P value=0.185
12. Avoiding social isolation during lesson time	2.321 1.108	2.539 1.212	2.193 1.027	T=1.796 DF=138 P value=0.075
13. Having difficulties in adjusting to the higher academic expectations of a mainstream classroom, (i.e. curriculum)	3.336 1.154	3.404 3.296	3.295 1.166	T=0.535 DF=138 P value=0.593
14. Undermining their interaction with their peers during lesson time	3.514 1.172	3.327 1.167	3.625 1.168	T= -1.460 DF=138 P value=0.147
15. Struggling to engage with the learning activity	3.543 1.069	2.000 0.817	1.886 0.794	T=1.275 DF=138 P value=0.205
16. Undermining their concentration	3.900 0.908	3.981 0.852	3.852 0.941	T=0.808 DF=138 P value=0.420
17. Undermining their interaction with their peers during break time	3.936 1.005	3.981 0.959	3.909 1.035	T=0.406 DF=138 P value=0.685
18. Being labelled negatively by their peers	3.943 1.058	4.000 0.970	3.909 1.110	T=0.490 DF=138 P value=0.685
19. Interrupting their social relationships with other children (i.e. friendships)	4.100 0.900	3.923 1.045	3.327 1.167	T= -1.802 DF=138 P value=0.074
20. Undermining their self-esteem	4.186 0.792	4.077 0.737	4.250 0.820	T= -1.252 DF=138 P value=0.213
21. Reducing their self-confidence	4.193 0.813	4.135 0.715	4.227 0.867	T= -0.810 DF=138 P value=0.420
22. Displaying more challenging behaviour	4.200 0.815	4.135 0.840	4.239 0.802	T= -0.728 DF=138 P value=0.468

Factor analysis indicated that teacher participants expressed views about three belief domains regarding the outcomes of co-teaching to children with SEN (see Table 11): 1) Positive academic, personal and behavioural outcomes, 2) Positive social, 3) Negative social, personal and behavioural outcomes. Further descriptive statistical analysis indicating mean scores for each of the above belief domains allows comparisons between GTs' and STs' responses regarding these three domain beliefs. Bearing in mind the Likert scale (1-5), the mean scores of both GTs and STs in each belief domain indicated that secondary general and special teachers participating in the research agreed that co-teaching has predominantly positive academic, personal and behavioural outcomes for children with SEN (Factor 1), secondly, positive social outcomes (Factor 2) and thirdly, negative social, personal and behavioural outcomes (Factor 3). Also, T-test analysis ($p<0.05$) indicated that the STs held more positive views about the positive social outcomes of co-teaching to children with SEN than the GTs.

Table 11. Means and standard deviation scores of both groups of teachers for three factors
Note: The lower the score, the greater the extent of agreement is expressed

Factor	GT (Mean/SD)	ST (Mean/SD)	T-test
1. Positive academic, personal and behavioural outcomes	13.154 3.494	12.182 3.480	T=1.595 Df=138

2. Positive social	13.904 4.560	12.330 3.829	P value=0.114 T=2.188 Df=138 P value=0.030
3. Negative social, personal and behavioural outcomes	20.250 3.230	20.772 3.423	T=-0.891 Df=138 P value=0.374

Outcomes for all children

Responses to 11 statements/items of the questionnaire aimed at indicating teachers' perceptions of the co-teaching outcomes for all children. Analysis revealed some remarkable results (see full Table in Appendices 25), which were set in an ascending order of means scores for all participants (see Table 12).

Teacher participants expressed their agreement in relation to the first two statements (see Table 3). On average, all teachers saw that co-teaching generates some positive social benefits to all children, such as *the promotion of their social and emotional growth* (item 1) and *the promotion of their interaction and cooperation with children with SEN* (item 2). Also, T-test analysis showed that ST were more positive compared to GTs regarding the first statements (see item 1, p<0.05).

Teachers were slightly positive towards the statements 3-6. Specifically, the participants expressed slightly positive views about some potential academic, behavioural and social outcomes of co-teaching to all children, such as *the improvement of their academic learning* (item 6), the *enhancement of their interest in participating to learning activities* (item 5), the *improvement of their behaviour* (item 4) and *the promotion of their acceptance of individual differences* (item 3). Also, T-test analysis indicated that STs were more positive compared to the GTs regarding the last statement (see item 3, p<0.05).

In contrast, teachers expressed slightly negative views with regards to whether *co-teaching undermined all children concentration* (item 7). Moreover, teachers expressed their disagreement in relation to the statements 8-11. Specifically, the respondents did not see that co-teaching resulted in all children *becoming more intolerant of students with disabilities* (item 8), *receiving less attention or learning support* (item 10) and *exhibiting challenging behaviour* (item 11). Lastly, teachers did not see that co-teaching *hindered all children's efficient learning*, with the ST disagreeing more with this statement than the GTs (see item 9, p<0.05).

Table 12. Outcomes of co-teaching to all children in ascending order of means scores for all participants

Note 1: Based on the Likert scale (*strongly agree* (1)-(5) *strongly disagree*), the lower the score the greater the extent of agreement is expressed

Note 2: Statements in which the GTs' and STs' responses are statistically significant different were highlighted in bold

Note3: The lower the score, the greater the extent of agreement is expressed

Outcomes	ALL (Means/Sd)	GT (Means/Sd)	ST (Means/Sd)	T-test
1. Promoting their social	1.971	2.192	1.841	T= 2.138

and emotional growth (i.e. empathy, sensitivity, mutual aid, solidarity, mutual understanding)	0.952	1.049	0.869	DF=138 P value=0.034
2. Promoting their interaction and cooperation with disabled students	2.064 1.005	2.192 0.929	1.989 1.045	T=1.160 DF=138 P value=0.248
3. Promoting their acceptance of individual differences	2.321 1.108	2.731 1.300	2.079 0.899	T=3.494 DF=138 P value=0.001
4. Improving their behaviour	2.614 0.979	2.711 1.035	2.557 0.945	T=0.903 DF=138 P value=0.368
5. Becoming more interested in participating to learning activities	2.700 0.935	2.731 1.105	2.682 0.824	T=0.298 DF=138 P value=0.766
6. Improving their academic learning	2.864 1.158	2.846 1.195	2.875 1.143	T= -0.142 DF=138 P value=0.887
7. Undermining their concentration	3.607 1.009	3.750 1.082	3.523 0.959	T=1.291 DF=138 P value=0.199
8. Becoming more intolerant of students of disabilities	3.936 0.969	4.077 0.987	3.852 0.953	T=1.330 DF=138 P value=0.186
9. Hindering their efficient learning	3.950 1.088	3.635 1.314	4.136 0.886	T= -2.694 DF=138 P value=0.008
10. Receiving less attention and support in their learning	3.986 0.831	4.058 0.778	3.943 0.862	T=0.787 DF=138 P value=0.433
11. Exhibiting challenging behaviour	4.093 0.767	4.077 0.788	4.102 0.759	T= -0.188 DF=138 P value=0.851

Factor analysis indicated that teacher participants expressed views about two belief domains regarding the outcomes of co-teaching to all children (see Table 12) Positive academic, personal, social and behavioural outcomes, 2) Negative academic, personal and behavioural outcomes. Further descriptive statistics analysis indicating means scores for each of the above belief domains allows comparisons between GTs' and STs' responses regarding these two domain beliefs. Bearing in mind the Likert scale (1-5), the mean scores of both GTs and STs in each belief domain indicated that secondary general and special teachers participated in the research agreed that co-teaching has predominantly positive academic, personal, social and behavioural outcomes for all children (Factor 1), and secondly negative academic, personal, and behavioural outcomes (Factor 2).

Table 13. Means and standard deviation scores of both groups of teachers for two factors
Note: The lower the score, the greater the extent of agreement is expressed

Factor	GT (Mean/SD)	ST (Mean/SD)	T-test
1. Positive academic, personal, social and behavioural outcomes	15.404 5.567	14.023 4.141	T=1.673 Df=138 P value=0.097
2. Negative academic, personal and behavioural outcomes	19.596 3.821	19.557 3.001	T=0.068 Df=138 P value=0.946

4.1.10 Factors affecting co-teaching

Participants' responses regarding the factors affecting the successful implementation of co-teaching revealed some interesting results (see full Table in Appendix 26). On average all teachers reported that all 14 factors are important for the successful co-teaching implementation, except two (see total mean scores for items 10 and 14). Specifically, teacher participants believed that *the length of experience in co-teaching* and mainly *the special teachers' collaboration with fewer general teachers* as having a limited effect on the successful implementation of co-teaching.

However, comparison between the mean scores of the GTs' and STs' responses indicated some interesting results. Firstly, the GTs and STs expressed different views regarding the extent to which the *mutual planning time* and *the special co-teachers' participation in fewer classrooms* affect the implementation of co-teaching (item 11 and 13 respectively). The above different views were also statistically significant (items 11 and 13, $p<0.05$). Specifically, while the GTs reported that the *mutual planning time* and *the STs' participation in fewer classrooms* affects co-teaching to a limited extent, the STs saw the above factors as important for the successful implementation of co-teaching. Moreover, STs believed more than the GTs that the *GTs' training* and the *STs' on-time employment* are important for the co-teaching implementation (item 1 and 12 respectively, $p<0.05$). By contrast, GTs believed more than the STs that *teachers' sensitivity towards children with SEN* (item 8) is important for the successful co-teaching implementation.

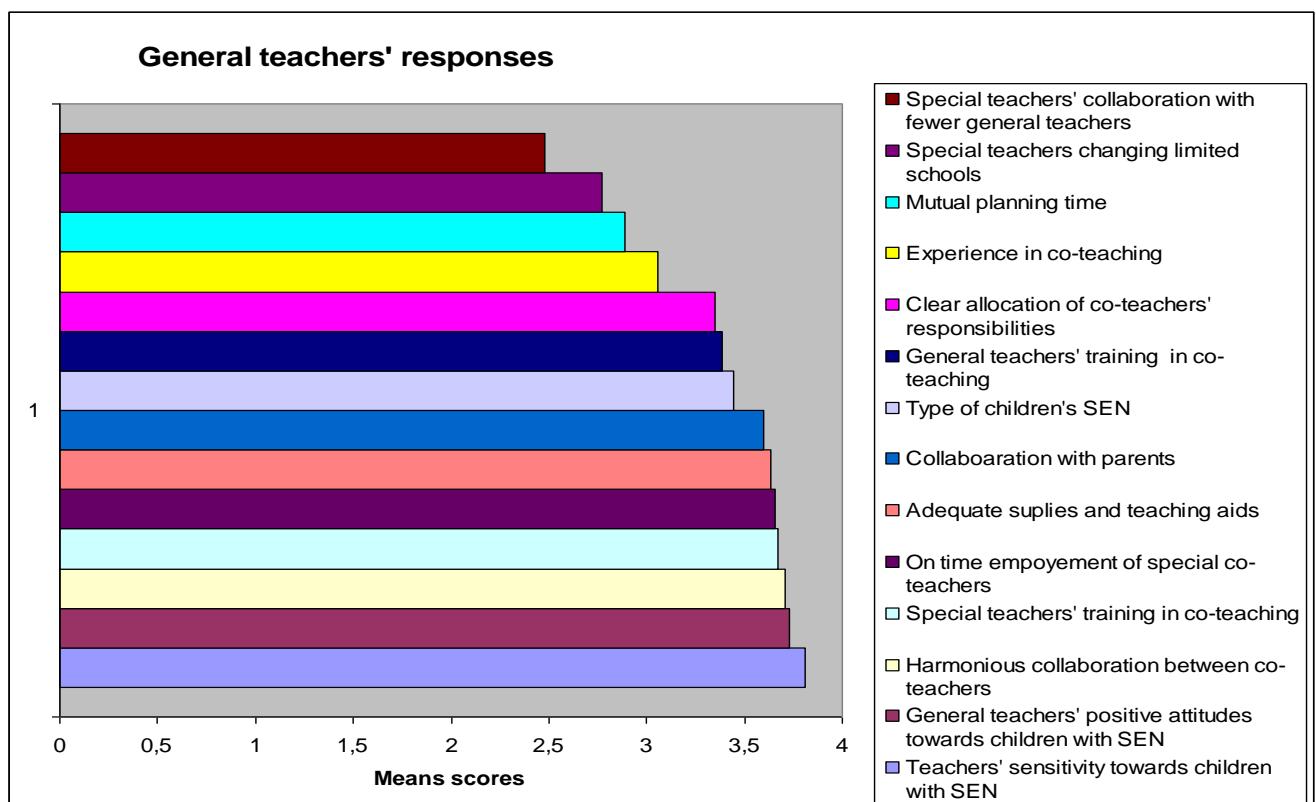
Furthermore, comparison between the GTs' and STs' average responses indicated some interesting results regarding the order of their perceived extent of importance for each of the 14 factors affecting co-teaching (see Graph 4). On average, while the GTs saw *teachers' sensitivity towards children with SEN* as mostly affecting the successful implementation of co-teaching, the STs seem to believe that this factor did not affect co-teaching as much, because they rank it as the seventh most important factor. By contrast, the STs saw the *STs' on time employment* as the most important factor for the successful implementation of co-teaching, while the GTs saw this as the fifth most important factor affecting co-teaching. Moreover, while the GTs viewed the *GTs' positive attitudes towards children with SEN* and the *harmonious collaboration between teachers* as respectively the second and the third most important factors affecting co-teaching, the STs rank the above factors in the same places but in reverse order. Saliently, while the STs saw the *GTs' and STs' training in co-teaching* as the fourth and fifth respectively most important factors affecting co-teaching, the GTs rank the *GTs' training* in the ninth place and the STs' training in the fourth place.

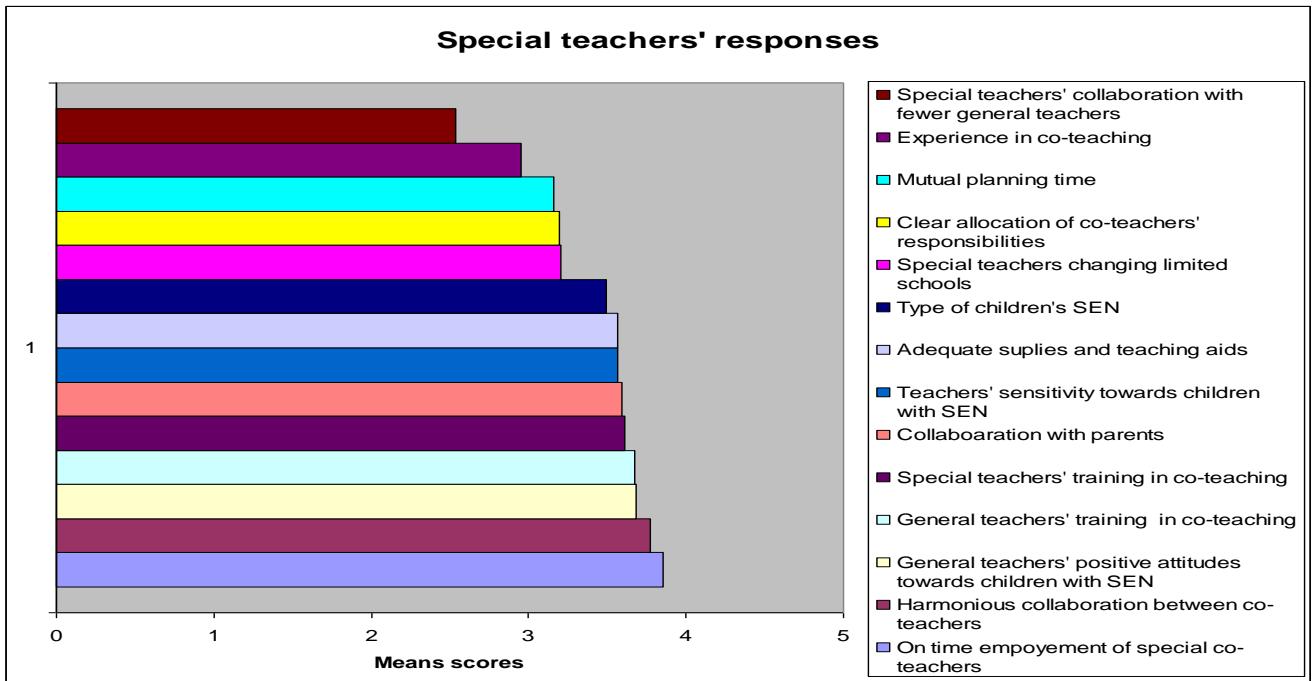
However, both GTs and STs agreed that the *STs' collaboration with fewer general teachers* influenced the successful implementation of co-teaching to a minimal extent. Moreover, while the GTs saw the *STs changing limited schools* as the second least important factor affecting co-

teaching, the STs rank it in a higher place, because they saw this as the fifth least important factor. The factor *experience in co-teaching* seems to be seen by both groups of teachers as having a limited effect on co-teaching implementation. This is because the STs saw the above aspect as the second least important factor, while the GTs saw it as the fourth least important factor. Interestingly, both GTs and STs agreed that *the mutual planning time* was the third least important factor influencing the successful implementation of co-teaching. Moreover, while the STs saw the *clear allocation of co-teachers' responsibilities* as the forth least important factor affecting co-teaching, the GTs rank it as the fifth least important factor. Lastly, both the GTs and STs saw the following factors: *Type of children's SEN*, *Adequate supplies* and *collaboration with parents* as having a neutral effect on the co-teaching implementation.

Graph 6. Factors affecting co-teaching

Note: The higher the score, the more affecting the factor is considered to be for the successful co-teaching implementation





4.2 Case studies findings

4.2.1 First case study: Co-teaching in a classroom included a child with visual impairment

Introduction

This case study includes 2 sub-cases of co-teaching in relation to the same student and classroom (see Appendix 10). In this classroom a thirteen year old boy with serious visual impairment (**D**) was included, and attended the first grade of middle school. Although D was identified by KEDDY as needing *co-teaching* in the classroom, D perceived himself as having no need for extra support.

Both co-teaching pairs described D as having serious behavioural difficulties and as a very difficult case, with the result that teachers in school and some children in his classroom were frustrated with him. Actually, D was observed to make excessive amounts of noise, to stand up and start singing, to disturb GTs when they were presenting the lesson, to start asking questions to GTs or expressing views irrelevant to the lesson content without raising his hand. He was also observed to start speaking loudly or to start hostile verbal arguments with other children and to knock his hands on the table during lesson time. From the STs' perspectives and D, it was confirmed that D had social-interaction difficulties and limited social contacts out of school. Moreover, D denied bringing with him in classroom his Braille language typewriter, thus both co-teaching pairs needed to support him orally. Lastly, D was described as having

additional academic support by a private tutor after the end of school. This tutor was assisting him to prepare and to write his homework in Braille language.

1st Sub-case

This case includes two classics teachers, one General (Maria) and one special teacher (Helen) (see Appendix 10). Co-teachers collaborated in the subjects of Ancient and Modern Greek language and Greek literature for seven teaching hours in total per week.

In terms of the teacher training, Maria did not attend any co-teaching training and has no previous co-teaching experience. However, Maria attended in-service training which included information about SEN. In addition, she attended training on how to prepare an IEP, in teaching differentiation, in theories of pedagogy, in using ICT and in children's grouping method. Lastly, Maria positively perceived the role of training in the co-teaching process. Helen had a Master's degree in SEN and had attended a relevant seminar. Also, she was aware of the co-teaching method and various models having attended a relevant in-service training. Helen saw this training as having various weaknesses. Specifically, Helen saw that this training usually included information which was inadequate or of limited relevance to the method of co-teaching. She also stated that often information was already known, i.e. information about the various types of disabilities was provided repeatedly, and that access to information about co-teaching was inconsistent across the different districts. On the whole, she perceived trainers as not being aware of *co-teaching* and particularly the STs' entitlement to participate in this kind of training as a strong disadvantage of the in-service training. Lastly, she suggested common training between GTs and STs, segregation of trainees according to stage of education, training relevant to co-teaching and workshops as desirable features for in-service training.

D was fully supported in the classroom. However, Helen said that D should also be supported out of classroom for a few teaching hours, due to D's unfamiliarity with Braille language and inability to move around the school on his own. Thus, she believed that withdrawing him out of classroom and providing individualizing teaching to D could help to further develop these skills which she perceived as necessary for his life. However, Helen did not withdraw D out of the classroom for two main reasons. Firstly, D's expressed wish was to be supported and included solely in the classroom, which was also repeatedly stressed by D. Secondly, D's limited social contacts out of school and behavioural difficulties influenced her to consider that priority for D was his social and behavioural development by including D in the classroom.

Understandings of 'co-teaching'

Both teachers perceived co-teaching as an extra support to children who were identified as having SEN. While Maria perceived this support as an individual help to one child, Helen perceived this as supporting any child with SEN needing help in the classroom. However, Maria saw "co-teaching" as an approach in which the STs have an active role in the classroom, but the leading role belongs to the GTs. Both teachers explained that they saw co-teaching in this way because this is how it is implemented, while they mentioned that the responsibility of

teaching, of lesson planning and of all children in a classroom was not a common one. Interestingly, both teachers perceived the inclusion of children with SEN in the classroom as the aim of co-teaching and of their practices.

They both saw this support as an in-class support, but Helen added that the out of class support should be combined to in-class support only in exceptional cases i.e. a child with severe difficulties or aiming to develop the child's skills necessary to her/his life.

Co-teachers' roles and their perceptions of them

Both teachers perceived Maria's role as including various responsibilities regarding all children – including D – in the classroom, such as presenting the lesson content, grouping, ensuring the participation and understanding, controlling the behaviour, assessing and grading all children's learning and homework. Furthermore, Maria saw the responsibility for arranging the physical environment and activities in the classroom and the differentiation of lesson content presentation to all children as being her own responsibility. Also, Helen saw the lesson and test preparation, the oral assessment of D and the other child with dyslexia, as being solely Maria's responsibility. All the above teachers' actions were also confirmed by observations.

Both teachers perceived Helen's role as focusing on D. Here are several things that she was observed to do: 1. sat next to D, 2. kept notes during the lesson, 3. recorded his own responses while he was doing a test, 4. controlled his behaviour, 5. differentiated the presentation of the lesson content. The above actions were also confirmed by D. Helen perceived herself as being responsible for several areas: 1. escorting D during the break, 2. taking out his books, 3. encouraging his lesson participation (i.e. raise his hand), 3. assessing his homework that was written in Braille language 4. differentiated the learning objectives. Observations confirmed all above co-teachers' actions, revealing also that Helen moderated D's activity and provided individualized instruction.

Maria saw STs as assisting children individually and GTs in the classroom and consulting GTs about various issues. Also, both co-teachers saw the ST's role as not an active one; rather, one that was limited to providing individual support. They also assumed that STs needed to feel productive and active in the classroom. However, Helen viewed STs as promoting the inclusion of children with SEN in classroom and helping to improve behaviour management for all children.

Intervention to all children by ST

Everybody, including D, supported the idea of STs assisting all children in the classroom. Both teachers saw Helen's intervention to all children's learning as being limited and implemented mainly during teamwork activities, which was also observed. They both mentioned that Helen occasionally supported some children who were sitting near her and managed all children's behaviour during the typical lesson presentation, which was also observed.

Although both co-teachers saw that assistance to all children by STs could be provided through the method of grouping, they both raised concerns whether this could be feasible in a more extended way. Helen believed that the way co-teaching provision is implemented in the Greek educational context limits the ST's role to individual children. She also saw that the type/severity of a child's needs may force STs to focus on this specific child, explaining that D's severe difficulties actually limited her attention to him. Maria said that she was unaware of what STs could do in an expanded role and thus, she saw the ST's role as focusing on one child. Maria also viewed the limited time for co-teachers' collaboration, the inflexible curriculum and the inclusion of children with varied SEN in the classroom as further obstacles. Interestingly, both co-teachers saw GTs' training limitations and GTs' hesitation to adopt new teaching methods as negatively contributing to the ST's role expansion. However, Helen said that Maria's positive personality and the fact that she was using the grouping method enabled her to intervene with all children.

Academically-oriented practices

Models of co-teaching

The dominant model of co-teaching perceived by both teachers as being implemented was the *one teach-one assist*, was confirmed by observations. This was implemented with Maria presenting the lesson and circulating among the tables, while Helen mainly provided academic and behavioural support to D, sitting next to him.

Interestingly, both teachers and observations confirmed that the method of grouping was used reflecting role exchange and the model of *station teaching*. Two types of grouping-teamwork activities were observed. During the first activity, which had an academically-oriented aim, only Maria circulated among tables – while Helen was sitting next to D – supporting all children, and managing D's and all children's behaviour included in that group. In that group the child with dyslexia was also included. Occasionally, Helen managed the behaviour of other children in the classroom. During the second activity, which had a social intervention aim, both teachers circulated to give guidelines and controlled children's behaviour, but most of the time Helen was sitting next to D.

Teaching methods

Maria said that the main teaching method followed was the teacher-centred teaching approach. Namely, Maria was observed to present the new lesson content while children were hearing this presentation. Also, Maria interacted with all children aiming to ensure their understandings and she was the only one who wrote on the board. However, she was not in favour of this method. Thus, she said that she occasionally used an alternative approach although this was not

observed: assigning a subject's chapter for children to study in advance before presenting the relevant lesson content. Also, an extended use of ICT was referred to by both co-teachers as framing the lesson presentation and teamwork activities, which indeed was observed during lessons.

Academic intervention practices

During the lesson presentation further strategies were observed to be followed by Maria, such as providing explanations, clarifications, examples from daily life, repetitions, connections to students' experience and previously learned material. Maria mentioned that she used these strategies in order to support D and the child with dyslexia academically. Helen used these strategies to assist D on a daily basis and all children, including the child with dyslexia, solely during teamwork activities.

Moreover, Maria stated that she encouraged, increased and ensured the participation of D and the other child with dyslexia. However, observations revealed that Maria had limited interaction with D during the lesson. This interaction was mainly placed during the learning assessment process of previously learned content and only when D raised his hand. In contrast, the remaining children were called on by Maria without raising their hand. Most of the time, Helen and D interacted with each other (i.e. D asked queries, working together). D also saw that he received individual attention mostly by Helen. According to observations, D raised his hand mainly after Helen encouraged him, rather than voluntarily. Also, he recalled prior knowledge during the learning assessment process, sometimes answering correctly.

Differentiation

Both teachers saw the method of differentiation as being implemented, expressing positive perceptions towards any type of adaptation to any child's needs. For instance, Helen passionately defends her stance: "*And there is no need for all children to achieve high academic standards. Every child has her/his own potentials and could achieve several things at academic level*".

In terms of D and the child with dyslexia, both teachers said that differentiated assessment in the form of oral examination was used. Teachers mentioned that during the oral examination, simplified question wording or further clarifications were used. Maria explained that she is also entitled to use adapted assessment questions (i.e. fill in the blanks), but only in relation to children with dyslexia. Moreover, observations reveal that a differentiated activity was assigned for D, based on D's interests. Lastly, both teachers mentioned that D's grading was based upon his personal capabilities.

Socially-oriented practices

Teamwork activities-grouping

Teamwork, role play activities as well as children's grouping were mentioned by both teachers and D as being used in the classroom. Maria added that some teamwork activities needed children to collaborate with each other also after school. However, Maria viewed that it was not easy for D to contact and collaborate with other children due to his visual impairment.

Both teachers stressed that teamwork activities and grouping were sometimes but not often used. Maria saw the inflexible curriculum, the limited lesson time duration, the fact that children feel more familiar with the traditional way of teaching and classroom arrangements as obstacles to this approach. Alarmingly, both teachers viewed teamwork and grouping approach as uncommon across other classes, because GTs usually adopt a traditional way of teaching and they do not have any training relevant to these approaches.

Social intervention practices

Both teachers saw teamwork activities combined with the use of ICT as enhancing all children's social skills development, with Maria seeing these activities as being the most effective methods for D. Similarly, Helen observed that D's motivation was increased during teamwork activities. Consistent with these observations, D expressed his preference for teamwork methods rather than traditional teaching. Furthermore, Helen noted that during breaks she used to intervene into D's social skills learning by discussing with him, encouraging him to communicate with other children and enhancing his self-confidence. D also confirmed and highlighted that communicating with Helen was the most important outcome for him as a result of co-teaching. Furthermore, Helen said that she invited another child to sit next to D during lesson time, aiming to enhance his communication with other children. In contrast, Maria intervened in D's social skills learning in an indirect way by discussing with all children issues relevant to friendships and behavioural issues.

Behavioural intervention practices

Both teachers intervened in D's behavioural difficulties. Helen saw that communication with D aiming to gain his trust were preconditions to D's better behaviour management. Helen also perceived that respecting D's needs, not pressing him academically, motivating him and enhancing his empathy were the most effective ways of controlling his behaviour. Maria intervened in D's behaviour difficulties in an indirect way by enhancing all children's empathy towards D. Observation data revealed that most of the time it was Helen who managed D's behaviour, while Maria did so to a limited extent.

Co-teachers' collaboration

Both teachers claimed that they collaborated in fields related to D, such as to what extent and in which aspects differentiation would be followed, how he could be academically and behaviourally better supported and to what extent the practices followed were effective. Helen also added that there was feedback regarding Maria's lesson presentation and communication regarding all children's grading and behaviour management. In contrast, they have never collaborated about the presentation of the lesson content. Also, both teachers said that they

collaborated in an informal way, even though they did not have any official planning time for doing so. Both teachers perceived this as not collaborating extensively or as much as they wanted.

Both co-teachers described their collaborative experience as being positive; having good communication and working closely with each other. Helen described her experience with very warm words, expressing very positive feelings towards Maria towards Maria in several instances as seen below:

"This was the best collaboration I have ever had."

"I admire her....all these methods that she used resulting in me being involved in other's children learning..."

"I feel very well in this classroom. I feel myself...comfortable to act as a teacher...more than in another classroom. It's because Maria is very good as a person and trying her best...she inspires me to do the same."

(Helen)

Despite this positivity regarding her GT co-teacher, Helen saw GTs in general as not being willing to collaborate and to communicate with STs.

Factors which impede and facilitate co-teaching

Both co-teachers mentioned various factors as negatively contributing to their collaboration. Initially, they saw that the educational law did not specify issues such as the ST's role in a co-teaching classroom, to what extent and when co-teachers should collaborate with each other. They emphasised that time for collaboration is limited, and there is not any official scheduled planning time.

At a practical level, both teachers viewed the fact that STs change between many schools as limiting co-teachers' collaboration, while Helen saw the inflexible timetable, especially in this school, as a further obstacle. At a personal level, Maria viewed that the limited communication and selfish emotions negatively contributed to teacher's collaboration across the various classes.

Interestingly, both teachers focused on various issues related to GTs, such as their way of teaching, their limited training in co-teaching and personal characteristics, as factors impeding co-teaching across the classes. For example, Helen viewed GTs, in general, as unwilling to make changes to their teaching style or to adopt new approaches and unresponsive to any consultation, while Maria emphasised GTs' lack of familiarity with teamwork-grouping methods. Also, Helen indicated the GTs' limited specialised knowledge about co-teaching and their limited professional development as factors impeding co-teachers' collaboration in the various schools.

Both teachers mentioned various obstacles and challenges in relation with teaching children with SEN based on their co-teaching experience. Both teachers mentioned that the inflexible curriculum limits *differentiation* as a method. Moreover, Helen stressed that the Greek secondary schools are oriented to exams, setting as priority child's grading. Maria added that the pre-determined content for each subject, the common exams for all children of the same age in a school, the limited lesson duration, and the large number of students in a classroom acted as obstacles to implementing any individual education plan. Interestingly, Helen saw the confrontation of the negative prejudices of teachers towards children with SEN and especially to D as the biggest challenge, while Maria perceived D himself and his serious difficulties as the biggest challenge.

Both co-teachers perceived teachers' personality as facilitating co-teaching. Thus, both teachers suggested that teachers in general be receptive to suggestions and to new teaching practices, eliminating prejudices against children with SEN. Helen also viewed shared aims between teachers and the development of various social skills (i.e. communication, empathy, trust, willingness to solve disagreements and elimination of selfishness), as facilitating collaboration.

Also, both teachers suggested legislative changes in relation to co-teacher's roles, which reflect the need of a more active collaboration between co-teachers. For example, the co-teachers' responsibilities should be officially determined and shared, such as the responsibility for teaching and lesson planning for which there should be an officially scheduled time. Interestingly, Helen suggested an alteration to the term parallel support, perceiving the current one as limiting teachers' perceptions and practices to one child. In terms of the ST's role, while both of them suggested STs adopting an active role and exchanging roles with GTs, Maria viewed that STs should also adopt a consultant role when working with GTs.

Also, both teachers focused on teacher training. While both suggested that GTs should receive training about co-teaching, Helen proposed that STs should also try to develop their personal knowledge on co-teaching by receiving training about child's learning assessment, differentiation and the use of ICT. Helen said that STs should also be aware of the subject's content and the learning objectives for each disability case that is officially determined by the Ministry.

At a school level, both suggested that schools should aim at inclusion and social skills development, while Helen saw curriculum differentiation, flexible timetable and ICT availability as facilitating co-teaching. Also, both stressed that STs should be hired on time and that continuity of co-teaching service at the same school should be provided to STs by the Ministry.

Outcomes of co-teaching

Both teachers saw D's academic progress as a result of co-teaching, including D himself. Also, co-teachers observed increased lesson participation and concentration. Maria saw the fact that

D could better understand the lesson content and was aware of his homework as further positive outcomes. D also added that he learned new ways to do his exercises by receiving more help.

At a social level, both teachers perceived that D's social skills had developed. Similarly, D saw interaction and collaboration with his classmates as having increased, while he mentioned neutral views regarding improved friendships. Also, everybody, co-teachers and D, noted a behavioural improvement.

At a psychological level, Maria said that D's self-confidence had improved while he felt more self-secure. D also described the fact that he was able to talk with Helen about various issues as the most important advantage when Helen was in the classroom and at breaks.

She (Helen) is helping me...and what I like most is when we are discussing with each other....during the breaks...that's I like most... (D)

Helen also viewed that D's trust towards co-teachers was enhanced, resulting in D having positive attitudes towards them. However, D expressed positive perceptions towards Maria but neutral to positive perceptions towards Helen, because he perceived Helen as strict towards his bad behaviour. Moreover, although D positively perceived co-teaching, he preferred not having two teachers for the next academic year. He stated the following:

"No...I don't want to have teachers next to me... not at all....I would like to have only the classroom teacher....I don't like having two teachers..." (D)

Although Helen felt that sitting next to D may result in D' social stigmatization, D expressed a positive view on this. However he expressed his preference for sitting with peers:

"...Yes I like sitting with Helen....but, I like most sitting with another child" (D)

Both teachers saw that all children's behaviour in general was better controlled with their co-teaching. However, Helen saw that co-teaching had limited academic outcomes for all children, given that her focus was mainly on D. Helen stressed that co-teaching had mainly social outcomes for all children, e.g. social skills development, acceptance of diversity and self-awareness through interaction and collaboration with children with SEN. Maria added the view that co-teaching resulted in all children feeling relieved due to D's better behaviour management. While Maria viewed co-teaching as having no disadvantages to all children, Helen added that her involvement in the management of all children's behaviour resulted in some children viewing her as a "second pair of eyes", which they may perceive negatively.

At a personal level, both co-teachers viewed that their professional knowledge had developed from using co-teaching. While Maria stressed that co-teaching resulted in better lesson preparation and increased her knowledge about SEN, Helen believed that her knowledge about

the use of ICT and teamwork activities developed. Maria also thought that by Helen assisting her during teamwork-activities with children's behaviour management and sharing responsibilities regarding D, this had a positive impact on her psychological well-being:

“...I need to confess that I felt relieved regarding D... If Helen were not here I don't know what I would do.” (Maria)

However, the co-teachers each noted a disadvantage of the approach for themselves personally on a professional level. Maria saw that Helen's focus on D limited her knowledge regarding D's visual impairment disability. Lastly, Helen viewed that sitting next to one child resulted in children seeing her as responsible for one child and made her feel like she was an observer.

Regarding co-teaching advantages for children with SEN in general, Helen viewed co-teaching as promoting their inclusion, eliminating their isolation and enhancing their social skills and academic development. Lastly, co-teachers believed that co-teaching is mainly necessary for children with visual impairment, while Helen added children with Autism and behavioural difficulties.

2nd Sub-case

The second case includes one General French teacher (Stella) and one special physics teacher (Dora) (see Appendix 10). Co-teachers collaborated in the subjects of History for two teaching hours per week in total. Stella was teaching History and French language in D's classroom. Apart from history, Dora also supported D in Geography and Maths for two teaching hours in total. According to both teachers, this was because Dora's schedule was divided between three other schools and the school directors did not make any alterations to the timetable. As a result, Dora could not find any available hour to support D in sciences. Also, during the last months a private tutor was allocated by D's parents to support D, because according to Stella and D, Dora was frequently absent.

In terms of teacher training, Stella stated that she had not attended any co-teaching training or seminars in SEN and had not had any other co-teaching experience before. Although Stella positively perceived the role of training, she viewed training in general as inadequate and far away from praxis. Dora had a Master's degree in SEN and had attended relevant seminars. Also, she was aware of the co-teaching method and models having attended a relevant in-service training session. Dora saw in-service training as having various weaknesses. Specifically, she saw the fact that teachers who are attending this seminar come from all stages of education (i.e. kindergarten, primary, secondary education) as a disadvantage, because she perceived these stages as being different to each other. Thus, Dora suggested common training between GTs and STs and also teacher segregation according to their specialism.

While Stella described D as a smart child with increased lesson participation in History, Dora perceived D as belonging in a special school or in need of in and out of class individual support due to his serious academic and behavioural difficulties. Dora's views about D's support were confirmed by Stella and D. However, D was fully supported in the classroom, because D was strongly opposed to being withdrawn. Both Stella and Dora saw that withdrawing him out of the classroom could have positive academic and personal outcomes for him. Namely, he could develop his Maths skills, which were highlighted by both of them as necessary for his life. However, Stella saw that this approach could limit his social contact.

Understandings of 'co-teaching'

Both teachers perceived co-teaching as one teacher teaching and the other assisting individually one child. Both teachers explained that they saw co-teaching in this way because it is implemented in this way while they mentioned that the responsibility of teaching, of lesson planning and of all children in a classroom was not a shared one.

Stella saw the ST's role as in-class support. However, Dora set as precondition that the child be able to access a mainstream school's curriculum; thus, she expressed her preference towards an approach which could combine the in-and out-of-class support. Also, while Stella viewed a child's social skills development, socialization, and inclusion as co-teaching and the schools' aims, Dora saw co-teaching as aiming to enhance the child's independence in their daily life.

Co-teachers' roles and perceptions of them

Both teachers perceived Stella's role as including various responsibilities regarding all children – including D – in the classroom, such as presenting the lesson content, assessing the learning, grading, assigning homework and managing all children's behaviour. Observations confirmed the above Stella's actions in the above. Dora also saw that assessment differentiation regarding D and the child with dyslexia as being solely Stella's responsibility.

Both teachers perceived Dora's role as focusing on D. Here are several actions that she was observed to do: 1. sat next to D, 2. controlled his behaviour, 3. kept notes during the lesson. However, Stella and D agreed that Dora's intervention in D's learning was significantly limited. Based on observations, Dora mainly managed D's behaviour, and helped him to take his book out of his bag and put it back. However, sometimes Dora was observed to keep notes on his book/notebook and to differentiate the presentation of then lesson content. Stella considered Dora's limited intervention with D as a consequence of Dora having a different subject specialism to History and the fact that she was attending more than one school on a daily basis.

Stella saw STs as assisting individual children and GTs in the classroom. Also, Stella perceived D's academic and behavioural intervention as being solely Dora's responsibility. Indeed, Dora explained that assisting one child in the classroom influenced GTs to perceive STs as solely responsible for one child. Stella also viewed Dora as being a specialist in co-teaching and a

consultant on issues relevant to how co-teaching could be implemented, to how problems related to D could be managed and to various teaching methods that should be followed in the classroom.

Intervention to all children by ST

Both teachers and D were positive about the idea of STs assisting all children in the classroom. Although both co-teachers mentioned that this assistance could be provided through the method of grouping, they both mentioned that Dora did not intervene academically or behaviourally with all children, which was also confirmed by observations. Stella explained this by saying that Dora had a nonchalant attitude. Stella also saw that she was unaware of what STs could do in an expanded role. In contrast, Dora viewed that D's serious behavioural difficulties limited her attention to D. Thus, Dora viewed that assisting all children is dependent upon the type/severity of the child's disability. Lastly, Dora set various preconditions such as all children being familiar with grouping methods, segregated into groups at the beginning of the academic year and STs to work as permanent staff in a school.

Academically-oriented practices

Models of co-teaching

The only model of co-teaching perceived by both of teachers as being implemented was the *one teach-one assist*, which was confirmed by observations. This was implemented with Stella presenting the lesson and circulating among the tables, while Dora was sitting next to D.

Regarding the reasons why the various models of co-teaching were not implemented, Dora perceived GTs, including Stella, as being responsible for this. Specifically, Dora saw GTs as not being willing sharing the classroom with STs and also as not giving STs opportunities to expand their role. She also saw GTs' limited training and experience in co-teaching as negatively contributing to the implementation of the various models across the classes. In contrast, she saw STs as trained enough to implement the various models. Conversely, Stella viewed that Dora's nonchalant attitude discouraged her from collaborating to a greater extent.

Teaching methods

A teacher-centred way of teaching was observed in the lessons. Namely, Stella was observed to present the new lesson content while children were listening to this presentation. Also, Stella was observed to interact with all children, including D, aiming to ensure their understandings and to help them to recall prior knowledge. But this interaction mainly took place when the children raised their hands. She also interacted with D aiming at controlling his behaviour. Lastly, Stella was the only one who wrote on the board.

Academic intervention practices

During the lesson presentation further strategies were observed to be used by Stella such as providing explanations, clarifications and examples from daily life, repetitions, connections to student's experience and previously learned material. Stella mentioned that she used such methods in order to academically support all children, including D and the child with dyslexia. Stella also reported that she implemented activities aiming to increase children's motivation although these were never observed. By contrast, Dora stressed that she felt unable to intervene with D's learning in any significant way due to his serious academic and behavioural difficulties. The following quote from Dora exemplifies a sense of resignation and powerlessness:

"It's a waste of time to ask me about D. We can't work with D at all. You can't easily implement anything..." (Dora)

Differentiation

Both teachers said that only differentiated assessment in the form of oral examination was used for D. Despite having reported this, no differentiated activity or any differentiated homework was observed to be assigned to D. While Stella saw that D did not need any other type of differentiation due to his good school appearance, Dora viewed that any further differentiation would be useless due to D's inability to do anything. However, D was observed to recall prior knowledge and answer correctly on limited occasions. D was observed to interrupt Stella by making comments irrelevant to the lesson content. Lastly, Stella said that regarding the other child with dyslexia, oral assessment was used including adapted assessment questions (i.e. filling in blanks, matching exercises).

Socially-oriented practices

Teamwork activities-grouping

Although both co-teachers have positive perceptions towards grouping and teamwork activities, they saw that such activities were very limited in teaching History. However, Stella claimed that in the French Language subject such activities were extended. During these activities, while Stella saw that D collaborated with his classmates, Dora reported that D mainly collaborated with her. However, neither grouping nor peer interaction was observed.

Stella explained that the subject influenced the extent to which teamwork activities were implemented in the classroom. Namely, Stella saw that the student's book in French language subject included more teamwork and role-play activities which positively contributed to the use of such methods. Yet she viewed History as a subject in which the teacher-centred method could be more easily used rather than teamwork-activities.

By contrast, Dora related this limitation with GTs being not interested in training in grouping methods using mainly the traditional way of teaching. She explained that children are also unfamiliar with such methods. Lastly, both teachers mentioned secondary schools' limitations (i.e. limited lesson duration and libraries, predetermined material, inflexible curriculum) as negatively contributing to the infrequent use of teamwork activities.

Social-behavioural intervention practices

Dora claimed that she attempted to enhance D's interaction with his classmates during breaks and assigned another child to take him a walk aiming at his social skills' development. Also, while Stella saw that by managing D's behaviour, his lesson participation improved, Dora viewed any practices used as ineffective.

Co-teachers' collaboration

Both teachers mentioned that their collaboration and communication were very limited. They did not commonly grade the children, including D, and plan the lesson. Both of them viewed the limited time and the fact that Dora changed between schools as limiting their collaboration. Dora also saw GTs in general and especially at this school as being inexperienced and unfamiliar with co-teaching.

Highlighting a mismatch in perspectives, while Dora saw this collaborative experience as positive and viewed that there was not any disagreement, Stella described it as very negative.

"To be honest I don't feel I have an actual experience...when there is no communication between teachers there isn't any collaboration either..."

(Stella)

Her disappointment and disagreement with the way Dora handled issues relevant to D, such as limited academic and behaviour intervention to D, arguments with D's father, and the fact that Dora was frequently absent or late during the lesson resulted in Stella feeling sorry for D and his parents and frustrated at Dora.

"I felt pity about D...observing her watching her hair or phone rather than supporting D...I was getting crazy... What could I say? It was a parody!"

"...she consulted D's father to place his child into a special institute...I feel sorry for them, they were forced to pay a private tutor..."

(Stella)

All these issues were confirmed by D, who had very negative perceptions towards Dora.

Me: "Why you don't like Dora?

D: "*Because she usually doesn't do anything...She is coming here and just sitting next to me... she is asking me to go outside of the classroom*"

Me: "Does she help you to do your exercises within classroom?"

D: "*No...*"

Me: "Does she help you to learn more things?"

D: "*No...*"

(Dialogue between D and I)

However, Stella did not communicate her disagreement to Dora, seeing the allocation of the ST's role as not being her responsibility. Also, Stella saw Dora as responsible for their limited communication and for their unsuccessful collaboration. Controversially, Stella saw her collaboration with the private teacher as a positive one, expressing positive views about her.

Similarly, D expressed the most positive feelings towards the private tutor compared to all other teachers. Lastly, Stella saw the classics co-teachers as a good example of collaboration between teachers.

Furthermore, both teachers viewed that their each other different subject specialisms negatively contributed to co-teaching. Compounding this further, Stella mentioned that each of their roles were not clearly determined at the beginning of their collaboration.

Factors which impede and facilitate co-teaching

It is apparent that both co-teachers mentioned a wide range of factors as negatively contributing to their collaboration, some of which have already been detailed. For instance, at a practical level, both teachers viewed the fact that Dora changes between many schools and the consequent limited available time for collaboration this leaves impede co-teaching.

Also, both teachers focused on various issues related to GTs, such as their way of teaching, their limited training in co-teaching and personal characteristics, as factors impeding co-teaching across the classes. They mentioned that the traditional methods of teaching utilized and the unfamiliarity with grouping teaching methods failed to positively contribute to co-teaching. Also, Dora saw GTs, in general, as being unwilling to adapt their teaching approaches, and as being unreceptive unreceptive to any consultation and feedback. Highlighting the recurrent theme of a lack of awareness, Dora saw GTs, – including school's directors, and the Ministry of Education – as being ill-informed about co-teaching approaches, while Stella mentioned that her limited knowledge about co-teaching and what STs could do in an expanded role, as a negative factor.

Regarding the obstacles that both teachers faced during their co-teaching experience, Stella considered D's behavioural difficulties and school-based limitations (i.e. inflexible curriculum, pre-determined by the Ministry content for each subject) as challenges. Dora saw the fact that school's directors did not make any alterations to the timetable as an important problem.

Both teachers viewed teacher's personality and their personal characteristics (i.e. willingness to collaborate) as facilitating co-teaching. Specifically, Stella saw the ST's personality – and not the educational system's limitations – as mainly influencing co-teaching. Moreover, Stella viewed that the ST's personality and the way she/he supports a child influences co-teaching, while she conceded that working in the public sector resulted in teachers being less productive. This is because Stella saw Dora's nonchalant and lack of professionalism, offering limited support to D, and the Director's tolerance towards this issue as the most important challenge.

As a result, she gave various recommendations to STs, such as being productive, motivating children, loving their jobs, carrying out self-evaluation at a professional level.

“Everything begins and finishes with us...” (Stella)

Also, both teachers saw common training, collaboration-communication between co-teachers and alterations in school's timetable as facilitating co-teaching. While both of them mentioned that GTs should receive training about co-teaching and the ST's various roles, Stella suggested that teachers should receive training which includes workshops. Moreover, Stella suggested clear allocation of co-teacher's responsibilities, officially scheduled planning time and the hiring of STs in one school. Lastly, Dora suggested STs adopting an active role, being hired on time and a system in which children with SEN will be placed in specific schools with GTs trained in co-teaching.

Outcomes of co-teaching

Both teachers did not see any academic, social and behavioural improvement on D as a result of co-teaching, while Dora mentioned that there was a limited behavioural improvement only during her presence in the classroom. However, D believed that his grades were improved. Interestingly, Stella mentioned that only when D was supported by the private tutor did she observe positive academic outcomes in D. Both teachers saw co-teaching as having no academic outcomes on all children, while Stella mentioned that Dora's presence distracted their attention. The following example illustrates this:

"She used to take out her mobile phone....all children look at her fancy phone and not me..." (Stella)

At personal level, both teachers viewed co-teaching as having neutral outcomes. Stella viewed the fact that STs in general, including Dora, sit next to an individual child can socially stigmatize the child.

Both teachers saw various social and personal advantages of the co-teaching approach to children with SEN in general. For example, Dora saw the enhancement of their self-confidence, self-awareness, courage, interaction and communication with their general teachers and classmates as important advantages, while Stella viewed co-teaching as limiting their isolation. Similarly, D perceived his inclusion in the classroom as the most important advantage of co-teaching, while he described the fact that he became confused having two teachers speaking simultaneously as a disadvantage of co-teaching.

"...sometimes I am confused when both teachers were speaking at the same time..."

(D)

However, Stella saw that the way co-teaching is implemented across the classes may negatively affect children with SEN's socialization. Specifically, Stella viewed the fact that STs in general, including Dora, sit next to an individual child as socially stigmatizing the child.

At an academic level, Dora saw co-teaching as increasing children with SEN's lesson participation. However, she stressed that co-teaching may result in children with SEN being dependent on a ST.

Regarding all children, Dora viewed co-teaching as having positive social and behavioural effects on all children i.e. development of empathy towards children with SEN, while she saw co-teaching as an approach which could positively contribute to their better behavioural management in the classroom. Lastly, while Stella viewed co-teaching as effective for all children, Dora saw co-teaching as effective solely for children who are able to attend a mainstream school.

Both of them mentioned various factors as influencing the co-teaching outcomes to children with SEN. Stella saw that the ST's personality and the way she/he supports a child, the extent to which teachers collaborated with each other and how co-teaching was implemented as major factors. Lastly, both of them referred to the type/severity of child's SEN influencing the co-teaching outcomes.

Conclusion

While both co-teaching pairs referred to the same classroom, they expressed opposing views to each other regarding practices used, outcomes of co-teaching on themselves, and in D. Namely, the first pair used the method of grouping which enabled Helen to intervene with all children's learning to some extent, while the other pair failed to use such practices at all. Also, while the first pair expressed that co-teaching had a positive impact on them at a personal and professional level, the second pair did not. Furthermore, while the first pair mentioned that co-teaching resulted in D's academic, behavioural and social skills development, the second pair mentioned neutral outcomes in all of the above fields.

Moreover, the collaboration between the first couple seemed to work well in contrast with the second couple. This is also reflected in the fact that the first pair expressed similar views to each other on various issues, while the second pair had opposing views on various issues. Namely, it seems that the following factors influenced the success or failure of their collaboration: co-teachers' perceptions about the aim behind their practices, D's potential, each other's roles and the extent to which co-teachers communicated with each other. Specifically, while the first pair communicated-interacted with each other and expressed positive feelings towards each other; the second pair's contacts seem to be limited as they failed to communicate even their disagreements.

Furthermore, while the first couple commonly perceived *inclusion* as the aim of co-teaching, the second pair had conflicting views with each other. Namely, Stella saw inclusion as the aim of co-teaching and of a mainstream school, while Dora saw co-teaching as an approach suitable solely for children who are able to attend a mainstream school and as targeting a child's independence in daily life. Also, while the first pair viewed D as a capable child, the other co-teachers had different attitudes from each other. Namely, Dora perceived D as not able to attend a mainstream school while, Stella had exactly the opposite opinion. As a result, a disagreement emerged. Moreover, the first pair perceived D's learning and issues relevant to D as a shared responsibility. In contrast, Stella perceived these issues as being solely Dora's responsibility, while Dora – alarmingly – attributed them to D's severe difficulties reflecting that there wasn't clear allocation of responsibilities.

4.2.2 Second case study: Co-teaching in a classroom included a child with visual impairment

Introduction

This case study includes two sub-cases of co-teaching in relation to the same student and classroom (see Appendix 10). In this classroom a fourteen years old girl with serious visual impairment (**P**) was included; she attended the second grade of middle school. Although P was identified by KEDDY as needing *co-teaching* in the classroom, P perceived herself as having no need for extra support. Similarly, both co-teaching pairs mentioned that P could adequately attend the lesson without receiving extra support and described P as very high achiever or gifted student. They also saw P as a very mature girl who dedicated to her academic improvement in all school subjects.

Both pairs explained that she did not need to be withdrawn out of classroom at all, so the support was entirely classroom-based. Also, they explained that P's expressed wish was to be supported and included in the classroom which was also confirmed by P. Furthermore, P always brought her type machine into the classroom for various actions such as keeping notes, answering her exercises and the test questions. Both co-pairs described P as an independent and proud child, who did not want to be underestimated and discriminated against but wanted to feel equal with other children. Her co-teachers in Classics provide the following perspectives:

"I was trying to provide explanations in almost everything... P used to say to me "I know that..." (Mary)

"She is selfish....she doesn't easily accept somebody's help" (Vaso)

The classics teachers described P as a child with high self-confidence. However, three out of the four teachers saw P as having social-interaction difficulties with her classmates and limited friendships. P confirmed that her interaction with her classmates in and out of class were limited, explaining that she is shy. From all perspectives, including P, it was confirmed that P did not have any behavioural difficulties.

1st Sub-case

This case includes two classics teachers, one General (Vaso) and one special teacher (Mary) (see Appendix 10). Co-teachers collaborated in the subjects of Ancient and Modern Greek language, Greek literature and History for eight teaching hours in total per week.

In terms of the teacher training, Vaso mentioned that she did not attend any co-teaching training or any seminar in SEN and has no other previous co-teaching experience. She was also unaware of the co-teaching method, the various models and how this method could be implemented; nor was she informed about what the law determines regarding the actual aim of co-teaching and what the roles of co-teachers are. However, she affirmed that she was informed about visual impairment and how to treat such children by specialists for blind children who visited the school. While Vaso positively perceived the role of training in the co-teaching process and in SEN, she did not perceive her limited training as affecting her self-confidence. Mary had a Master's degree in SEN and attended a relevant seminar. Also, she was aware of the co-teaching method and various models having attended relevant in-service training. However, she saw this in-service training as insufficient because this usually included information largely irrelevant to the method of co-teaching. Moreover, she mentioned that she was further informed about co-teaching by searching on the internet for relevant information.

Understandings of 'co-teaching'

Both teachers perceived co-teaching as extra in-class support to children who were identified as having SEN in a mainstream classroom. Specifically, Vaso viewed this as one teacher teaching and the other assisting individually one child. Both teachers explained that they saw co-teaching in this way because it is implemented in this way, as they mentioned that the responsibility of teaching, of lesson planning and of all children in a classroom was not shared. Particularly, Mary explained that the way co-teaching provision is implemented in the Greek educational context limits the ST's role to individual children and influences teachers in general to perceive co-teaching in a narrow way. Mary saw the inclusion of children with SEN in the classroom as the aim of co-teaching, while Vaso saw co-teaching as extra support and differentiation for children with SEN, provided by STs.

Co-teachers' roles and perceptions of them

Both teachers perceived Vaso's role as including various responsibilities regarding all children – including P – in the classroom such as presenting the lesson content, assessing the learning, grading, assigning homework. The above Vaso's actions in the above were also confirmed through observations. Also, Mary saw that the responsibility for arranging the physical environment, for meeting all pupils' parents as being solely Vaso's responsibility. Mary and observations confirmed that Vaso took sole responsibility for managing all children's behaviour.

Both teachers perceived Mary's role as focusing on P. They both mentioned several roles that Mary fulfilled: 1. sitting next to P and assisting her 2. differentiating the presentation of the lesson content 3. translating P's homework and test documents from the Braille into Greek. Mary also perceived herself as being responsible for several things: 1. escorting P during the break, 2. meeting P's parents 3. whispering to P anything that was written on the board or any question-exercise that was in the course-book, 4. describing orally images to P. The above actions were also confirmed by observations and P.

Both teachers saw the ST's role as solely assisting P individually, but also Mary perceived herself as a mediator between P and Vaso. Interestingly, Vaso sometimes perceived Mary as a "stranger" or as a "child" in "her classroom" because she did not find that Mary had to do many things in the classroom. Mary explained that assisting one child in the classroom influenced GTs to perceive STs as solely responsible for and assistants of one child. She also explained that STs could adopt a consultative role for GTs by making various suggestions. However, she did not see that STs should have a training role for GTs because she perceived that this is a trainer's responsibility.

Intervention to all children by ST

Both co-teachers mentioned that in the classroom two more pupils needed extra support, namely a child who was identified as having learning difficulties and a very low achiever. However, both teachers agreed that Mary did not intervene academically or behaviourally with all children which was also confirmed by observations. However, Mary said that once or twice she supported a child who was sitting near her during the typical lesson presentation, but this was never observed.

Mary and P supported the idea of STs assisting all children in the classroom. Mary explained that P was a very high-achieving student and this could enable her to intervene in other children's learning. But Mary was unable to communicate or to collaborate with Vaso and therefore, she could not support the other children. Also, she saw that assistance to all children could be provided through the method of grouping, which could result in limiting stigmatisation of children with SEN. By contrast, Vaso did not support the idea of STs assisting all children in the classroom, because it would be a noisy process and she raised concerns whether this could be feasible in a classroom where children with varied types of SEN are included.

Academically-oriented practices

Models of co-teaching

From all perspectives and observations, it was confirmed that the model of *one teach one assist* was the only model of co-teaching used in the classroom. This was implemented with Vaso presenting the lesson and circulating among the tables, while Mary was just sitting next to P.

Regarding the reasons why the various models of co-teaching were not implemented, Mary viewed that her bad communication and relationships with Vaso discouraged her from collaborating to this extent. She also said that GTs and STs across the classes have limited training in co-teaching, which negatively contributes to the implementation of the various models.

Teaching methods

Mary said that the main teaching method followed was the teacher-centred teaching approach. Namely, Vaso was observed to present the new lesson content while children were hearing this presentation. Also, Vaso was observed to interact with all children – including P – aiming to ensure their understandings and to help them to recall prior knowledge, which occurred even if children did not raise their hands.

Academic intervention practices

During the lesson presentation further strategies were observed to be used by Vaso such as providing explanations, clarifications, examples from daily life, repetitions, connections to student's experience and previously learned material. Vaso mentioned that she used such methods in order to academically support all children, including P and the child with learning difficulties. Vaso also said that she encouraged and paid attention to P and the other child with learning difficulties in order to ensure and extend the participation of P and other child with learning difficulties. However, Vaso was observed to interact and to pay more attention to P compared to the other child with SEN. Namely she was observed to extensively call on P without raising her hand, aiming to ensure her understandings.

Lastly, Mary and observations confirmed that there was an increased interaction between Vaso and P during the lesson time compared to the interaction between Mary and P, which was limited. According to Mary, firstly this was because P was a very high-achieving student and thus, she did not need much support from her. Secondly, she viewed that Vaso's responsibility for assessing-grading all children affected this increased interaction between them.

Differentiation

Regarding the child with learning difficulties, Vaso stated that sometimes she differentiated her assessment by providing further explanations, examples and simplified questions. However,

although this was not observed. Mary complained that Vaso did not use any differentiation in assessment and never provided any further explanations.

In terms of P, both teachers mentioned that no differentiated assessment was used. Additionally, Mary saw that her academic intervention to P was limited stressing that she supported her and differentiated the lesson content presentation on limited occasions. Similarly, observations revealed that Mary had limited interaction with P during the lesson and rarely intervened into P's learning. Mary was mainly observed to whisper to P what Vaso wrote on the board. This was also confirmed by P who stressed that although this intervention was limited, when occurred it enhanced her understandings.

Mary explained that P did not need any further support. Interestingly, P also perceived herself as having no need for extra support in Humanities which are perceived by her as easier subjects compared to Sciences. Observations revealed that P participated actively and frequently raised her hand voluntarily without being called on by Vaso. Also, P recalled prior knowledge during the learning assessment process, to talk about or to use a strategic skill, to clarify or elaborate on content, usually answering correctly. Lastly, P mentioned that she received equally individual attention by both of them and felt comfortable asking for help from both teachers. However, P was mostly observed directing queries to Vaso rather than to Mary.

Socially-oriented practices

Limited teamwork activities-grouping

Although, both teachers were positive towards grouping and teamwork activities, they saw that such activities, peer interaction and collaboration were very limited. Observations and P confirmed that although children were grouped into four groups, no collaboration or peer interaction was implemented.

Both teachers mentioned secondary schools' limitations as negatively contributing to the use of teamwork activities. Here are several obstacles to this approach that they mentioned: 1. predetermined material, 2. inflexible curriculum, 3. loss of many teaching hours, 4. large number of children in the classroom, 5. lack of new technology facilities, 6. limited lesson duration. Furthermore, Mary related this limitation with GTs being not trained in grouping methods and using mainly the traditional ways of teaching, while she saw teamwork activities as being solely the GT's responsibility. Lastly, Vaso explained her belief that a classroom which includes well-behaved or gifted children could positively contribute to the use of teamwork activities.

Social-behavioural intervention practices

Mary said that she attempted to enhance P's social skills development and her interaction with her classmates during breaks by initiating a conversation between them. This was also confirmed by P. Mary also mentioned that she did not intervene with P's behaviour, because P

did not face any behavioural difficulty. Vaso commented that she tried to be fair with everybody and to manage all children's behaviour without discrimination.

Co-teachers' collaboration

Both teachers said that they did not commonly plan the lesson or actively collaborate with each other. Vaso expressed neutral feelings about this collaborative experience and viewed that there was not any disagreement. In contrast, Mary saw that their collaboration and communication even on issues related to P were very limited. Mary considered that P's good school performance limited their collaboration because she believed that if P had severe difficulties, this would force them to actively collaborate with each other. She also described her experience as very negative and their relationships as bad, explaining that she felt unwelcome in the classroom and in the school:

"Although, I know some things about this method...I didn't want to make any discussion...I didn't feel comfortably....Imagine someone who doesn't say to you "good morning"...How would you feel?" (Mary)

"The other teacher never turns her eyes on me... It's like I am invisible...she never speaks to me.... I feel like intruder... when I am speaking to P to explain something, she usually asks P "Is everything ok P?"...It's like she doesn't trust me..." (Mary)

Observations confirmed limited eye contact between Vaso and Mary, with observations confirming Mary's discomfort. Vaso, in turn, believed that Mary had a very distinct role in the classroom and did not become part of the classroom. Vaso estimated that all children including P shared this perspective. P also perceived the GTs in the classroom as the core teachers.

Factors which impede and facilitate co-teaching and teacher's collaboration

Both co-teachers mentioned various factors as negatively contributing to their collaboration and co-teaching. At a practical level, both teachers raised the typical issues facing STs – e.g. Mary changed between schools and the subsequently limited available time for collaboration and communication – as impeding co-teaching. Although Mary mentioned that in this specific school all the necessary changes to the timetable had been made, she saw the inflexible timetable across the schools as a further obstacle in implementing co-teaching in secondary schools. At a school level, Mary raised that the fact that STs are not hired at the beginning of the academic year and secondary school limitations (i.e. secondary schooling oriented to exams, limited lesson duration) as impeding co-teaching.

Moreover, Mary raised the typical issues facing GTs – e.g. GTs' unwillingness to adopt their way of teaching, their limited training in co-teaching and co-teachers' age as factors impeding co-teaching across the classes. She saw the fact that GTs in general were not so informed and experienced about the co-teaching method – as factors impede co-teachers' collaboration. She

saw that GTs use mainly the traditional way of teaching being unwilling to make changes in their way of teaching. Lastly, one particularly incisive comment from Mary regarding the difficulties in team-teaching dynamics is that co-teachers at the same age may develop competitive relationships.

Also, Mary made a critique stressing that the way co-teaching is implemented in Greece limits the successful implementation of co-teaching in Greek schools and the ST's role to individual children. As a result, STs considered co-teaching in a narrow way and STs did not adopt an active role in the various classes. Lastly, she estimated that the problem starts from KEDDY who identified only some children as needing support with the method of co-teaching.

Both co-teachers perceived teachers' personality as facilitating teacher's collaboration. Specifically, Vaso perceived teacher's personal characteristics (i.e. willingness to collaborate) and shared aims between teachers as facilitating teacher's collaboration. Also, Mary saw communication between teachers as the most important factor for teacher's successful collaboration. She stressed that GTs should always try to make the first step for communication, because she perceived STs as visitors and GTs as hosts across the classrooms.

At the macro level, both teachers suggested legislative changes in relation to co-teacher's roles, which reflects the need for a more active collaboration between co-teachers. For example, both teachers mentioned that co-teacher's responsibilities should be officially determined and shared, with officially scheduled planning time for teachers' collaboration. Both suggested that STs adopting an active role and exchanging roles with GTs would be beneficial. Of significance, Mary suggested that the term "co-teaching" should be officially and clearly defined in a way that could expand the ST's role to all children. Moreover, both suggested alterations in co-teaching implementation expressing concerns that co-teaching is not implemented in a right way in Greece. Lastly, Mary suggested all children with SEN receiving an official diagnosis from KEDDY, which would give to them the right to a special teacher in the classroom when required.

Both teachers also mentioned the shortcomings of teacher training. While both believed that training about co-teaching and grouping methods is desirable for GTs, Mary recognised that STs should also try to develop their personal knowledge towards co-teaching; Furthermore, Mary made some suggestions about the in-service training in co-teaching. Specifically, she suggested a common training programme for both GTs and STs, which would be implemented by specialist trainers in co-teaching and include information closely associated with the co-teaching method and new ways of teaching (i.e. grouping).

Outcomes of co-teaching

Both teachers did not see any academic improvement on P as a result of co-teaching, because they both stressed that P was already a very high achiever student. P's perspectives below concur with both Vaso and Mary's view on the limited impact of co-teaching on her learning outcomes:

Me: "Do you like that you have two teachers within the classroom?"

P: "I think this wasn't so perceptible. However it was nice..."

Me: "Why it wasn't so perceptible?"

P: '*I don't know...Because, the other teacher was just sitting next to me...and didn't do many things.*'

(Dialogue between P and I)

Both mentioned various factors as influencing the co-teaching academic outcomes to all children across the classes, such as the type of child's SEN, performance of all children at the school and the effectiveness of their prior learning experiences.

At a social level, Mary saw P's interaction with her classmates during the breaks as having increased. However, P worried that STs escorting her during the breaks limited her interaction with her classmates and expressed her preference towards interacting with her classmates during the break and not only with STs. P also expressed neutral views regarding improved friendships and stressed that co-teaching did not affect her behaviour. From Vaso's perspective, P's self-confidence increased as a result of receiving extra attention from a second teacher, although she did not see that co-teaching had any social effect on P. Mary viewed the inclusion of children with SEN in a classroom as the major advantage, but felt that STs sitting next to an individual child was socially stigmatizing. Indeed, P felt that other children were more hesitant to interact with her due to the STs presence.

Both teachers did not see that co-teaching affected children's academic progress, behaviour or lesson participation at the whole-class level. Specifically, Mary believed that focusing mainly on P, resulted in co-teaching not having much academic effect on all children. Mary also did not see any behavioural change on them as a result of co-teaching. At a social level, indicative of her educational philosophy, Mary argued that co-teaching had positive social outcomes for all children, e.g. social skills development, acceptance of diversity and self-awareness through interaction with children with SEN – the social and behavioural benefits of co-teaching to all children were more important compared to the academic ones.

However, Mary believed that the way co-teaching was implemented had also some disadvantages to all children. Namely, she viewed that by focusing mainly on P, children perceived her as responsible exclusively for P. Lastly, Vaso perceived that Mary's presence distracted their attention:

"They may comment on what you are wearing, what kind of bag you are holding...on why you are circulating or sitting on the table" (Vaso)

At a personal level, Mary viewed that her professional knowledge had developed by observing the teaching of another teacher, while Vaso saw co-teaching as not having much effect on her professional development. Lastly, Mary shared that working with a very special girl was both inspiring and a privilege:

"I feel lucky....despite her visual problem she managed to do everything in an excellent way...this made me feel that nothing is impossible". (Mary)

2nd Sub-case

This case included one General Maths teacher (Betty) who was also the director of the school and one special physics teacher (Tina) (see Appendix 10). As well as supporting two of P's four hours in Maths, Tina also supported P in Physics, Biology and Chemistry for four teaching hours in total.

In terms of the teacher's training, Betty did not attend any co-teaching training and has not had any other co-teaching experience before. She did not know what the responsibilities and roles of each co-teacher were, what STs could do in an expanded role and how this model should or could be implemented. However, Betty had attended a seminar about SEN. Tina has a Master's degree in SEN and attended a relevant seminar. Although, Tina was informed about the basic principles of the co-teaching method, but she was not aware of the various models and had never attended an in-service training in co-teaching. Tina saw this training as adequate for undertaking the post of co-teacher.

Understandings of 'co-teaching'

Both teachers perceived co-teaching as an extra support to an individual child who was identified as having SEN. Betty saw this support as individual, specialised and based to each child's needs. In contrast, Tina described this support as a "private lesson" or tutorial which is provided to a specific child in the classroom.

Betty commented that "co-teaching" is an approach in which the STs have an active role in the classroom, whilst emphasising that the leading role belongs to the GTs. Predictably, as co-teachers in other case studies, co-teaching was seen in this way because it is implemented in this way, as they mentioned that the responsibility of teaching, of lesson planning and of all children in a classroom was not a common one.

Differing views were given regarding how they believe the child should interact and participate in the lesson. On the one hand, Tina also suggested this support to be provided to a child separately from the remaining children i.e. at the back of the classroom, aiming not to disturb the other children. On the other hand, Betty viewed child's inclusion, elimination of its isolation and stigmatization as co-teaching aims, Tina saw co-teaching as aiming to child's academic development.

Co-teachers' roles and perceptions of them

Both teachers saw Betty as having overall responsibility for all areas of all children's teaching and learning – including P – in the classroom, such as presenting the lesson content, assessing the learning, grading, assigning homework. Also, Tina saw that the responsibility for arranging the physical environment, and for managing all children's behaviour as being Betty's responsibility. Both teachers perceived Tina's role as focusing on P in terms of the following: 1. sitting next to P and assisting her, 2. differentiating the presentation of the lesson content, 3. translating P's homework and test documents from the Braille language into Greek language. The above co-teachers' actions were also confirmed by P and observations.

Both teachers saw the ST's role as solely responsible for P. Moreover, Betty viewed Tina as solely assisting P and herself in the classroom. Specifically, Betty saw Tina as responsible for various issues related to P, such as the differentiation of lesson content presentation to P and escorting P during the breaks. Betty saw Tina as not being responsible for presenting the lesson content to all children. Interestingly, Tina mentioned that she felt that Betty saw her as P's assistant, stressing that Betty had the leading role in the classroom, which was also confirmed by observations.

Intervention to all children by ST

Both co-teachers said that there was one child with learning difficulties and some very low-achieving students in Maths who needed extra support. Tina explained that she occasionally intervened in the learning of some children who were sitting near to her. Although this was never observed, P confirmed this, P stressed that Tina did not help them in a beneficial way, merely providing the correct answer to a question without providing any explanation.

Interestingly, Tina mentioned that in other subjects, i.e. in Physics, in which she collaborated with another GT, she provided to all children in this classroom further explanations – clarifications in relation to the lesson content presentation. These explanations took place only after the GT asked her opinion about an issue. However, Tina stressed that this did not happen during her co-teaching experience with Betty. She explained that her better communication with the General Physics teacher compared to Betty positively contributed to them collaborating to this extent.

Betty and P supported the idea of STs assisting all children in the classroom. However, Betty raised concerns whether this could be feasible and she set the availability of ICT facilities across the classrooms as the main precondition for STs to intervene with all children's learning. By contrast, Tina was negative about the idea of STs assisting all children in the classroom. She raised concerns as to whether she personally could support more than one child. Tina saw this as a noisy process that would disturb the other children's attention. She explained that she actually noticed that the other children's attention was disturbed by intervening with P's learning.

Academically-oriented practices

Models of co-teaching

Unsurprisingly, the only model of co-teaching perceived by both teachers as being implemented was the *one teach-one assist*, which was confirmed by observations. They both mentioned that there was not any role exchange between them. This was implemented with Betty presenting the lesson and circulating among the tables, while Tina was sitting next to P.

Regarding the reasons why the various models of co-teaching were not implemented, they both explained, as common the previous two case studies, that the way co-teaching provision is implemented in the Greek educational context limits the ST's role to individual children. Tina assumed that Betty would not be so positive about the idea of role exchanging or make any changes in her way of teaching; however, she saw the other GTs – who were co-teaching with her in P's classroom – as being more receptive to such a change compared to Betty.

Teaching methods

A teacher-centred way of teaching was observed in the lessons. Namely, Betty was observed to present the new lesson content, while children were hearing this presentation. Also, Betty interacted with all children, including P, aiming to ensure their understandings and to help them to recall prior knowledge. But this interaction occurred even if children did not raise their hands.

Academic intervention practices

During the lesson presentation further strategies were observed to be used by Betty such as providing explanations, clarifications and examples from daily life, repetitions, connections to student's experience and previously learned material. Betty mentioned that she used such methods in order to academically support all children, including P and the child with learning difficulties.

Differentiation

Betty mentioned that differentiating the lesson content presentation to all children by providing further explanations and clarifications. In terms of the child with learning difficulties and low-achiever students, Betty said that she simplified her questions during the lesson presentation and learning assessment process. She explained that she was helping these children to give a right answer in order for their self-confidence to be increased. In contrast, Tina claimed that Betty never differentiated the lesson content presentation to all children by providing further explanations to them. But observations clearly revealed that Betty actually reformulated repeatable and simpler questions when she saw that a child was not able to answer a question. Nonetheless, Betty did not use any differentiated assessment stressing that all children were assessed to exactly the same questions.

In terms of P, both teachers mentioned that no differentiated assessment was used except for differentiation of the lesson content presentation. Specifically, from all perspectives, including P

and observations, it was confirmed that Tina used her own and P's hands to help P understand the various figures that Betty wrote on the board or figures that are included on student's handbook. Indicating that this is a worthwhile subject-specific element of support, P viewed this help as the most important advantage of co-teaching to her and as the most important help provided by Tina in Sciences subjects; Tina helped her by describing orally these figures and making them more explicit to her.

Tina viewed her academic intervention with P as being limited explaining that P did not need much support because she was very smart and a high-achiever. P was observed to have very increased lesson participation and was always raising her hand voluntarily without being called on by Betty. P also recalled prior knowledge during the learning assessment process, talked about or used a strategic skill, clarified or elaborated on content, while she always answered correctly. Also, P saw Tina's intervention with her learning as limited, but enhancing her understandings. However, observations revealed that these interventions had perhaps been underestimated given that Tina had extended interaction with P during the lesson and most of the time Tina intervened with P's learning. Specifically, Tina was observed to whisper to P what Betty wrote on the board and to provide further clarifications to P regarding the various exercises that Betty assigned to all children. Also, observations and P confirmed that Tina's intervention was more extended compared to the special classics teacher. P nonetheless recognised that she required more help in Sciences compared to Humanities, because Sciences included figures-images which her Braille's handbook did not include. The quotes below illustrate this admission:

"They (i.e. special teachers) explained to me some things that are for example images or figures, namely things that are not letters or numbers that I can easily understand and read...especially the science special teacher gives explanations to me during the lesson all the time...but in humanities the special teacher doesn't explain to me so many things because I don't need it so much...." (P)

"I think humanities are easier...Maths are a little bit difficult or complicated, because they have figures which my book does not depict ...humanities don't have many figures...so, I could carried it off quite well...I think I didn't need much help from Ms Mary" (P)

Interestingly, P saw that she did not need extra support and even not the translation of her tests into the Greek that both STs provided to her; she considered considered that she could easily answer the various test questions orally. However, she described the test translation and the extra clarifications provided by both STs as being the only co-teaching advantages to her.

Me: "Would you choose to have two teachers in the same classroom at the next academic year?

P: "*I don't think so...I think that it is not so necessary for me... It doesn't bother me...exactly the opposite...but it's ok..."*

Me: 'The translation that the special teacher was providing to you....was it helpful for

you?"

P: "Yes, this was an advantage...but I could also answer orally..."

(Dialogue between P and I)

P also saw both STs' help in reading the various test questions to her as valuable, because she saw that GTs did not have available time for doing so. Lastly, P and observations confirmed that P received equally individual attention by both teachers and felt comfortable asking for help from both teachers.

Socially-oriented practices

Teamwork activities-grouping

Both teachers have positive perceptions towards grouping and teamwork activities, because they saw them as having positive social and academic outcomes to all children. Although, Betty stressed that these methods were extensively used in the classroom, Tina, P and observations did not confirm this. Actually, Tina and P stressed that children were just grouped into four groups, but only once or twice were teamwork activities implemented. P also said that during these activities she collaborated only with Tina and never with her classmates.

"The teachers of the classroom separated us into groups only when you were (i.e. me during the observation process) within classroom...and two more times, I think, at the beginning of the academic year...supposedly to show that we separated into groups...we don't collaborate with each other...we don't do this...we were just separated...I did not collaborate with any other child ...only with Ms Tina..." (P)

Social-behavioural intervention practices

Tina said that she attempted to enhance P's interaction with her classmates during breaks and her social skills' development by initiating a conversation between them or by encouraging them to play several games. This was also confirmed by P. However, Tina did not recall having intervened with P's social skills development during the lesson time.

Co-teachers' collaboration

Both teachers said that they did not commonly plan the lesson or actively collaborate with each other. Also, Tina said that Betty never asked her opinion or gave her the floor to provide further explanations to the whole classroom on any issue. Moreover, Betty mentioned that there was not any feedback discussion at the end of the lesson content presentation.

Although both co-teachers described their collaborative experience as being positive, they both mentioned that they sometimes disagreed with each other about various issues related to P. Betty also saw the fact that Tina supported P for only two of the total four teaching hours in Maths as negatively contributing to their collaboration and to children's learning support. Moreover, Betty saw that the fact that co-teachers' roles and especially the ST's role, are not officially defined as impeding her collaboration with Tina.

Furthermore, Betty viewed their different subject specialisms as an obstacle, because she perceived that Tina had inadequate knowledge background in Maths and it would be difficult for her to be adequately prepared for co-teaching. Therefore, both teachers mentioned various factors that facilitate teacher's collaboration across the classes, such as as co-teachers having the same subject specialism.

Specifically, Tina described Betty as being headstrong and wishing everything to be done in her own way. Lastly, Tina said that the fact that Betty was also the school's director contributed to them having additional disagreements about administrative issues (e.g. permission to take leave).

Factors which impede and facilitate co-teaching and teachers' collaboration

Both co-teachers mentioned various factors as negatively contributing to co-teaching. At a practical level, they both saw the fact that Tina changed between schools and the limited available time for communication as impeding their collaboration. Thus, Betty expressed her preference for co-teaching with a Maths teacher. Lastly, Tina saw the inflexible timetable across the secondary schools, as a further obstacle in implementing co-teaching.

Betty focused on the fact that the educational law failed to specify issues such as the ST's role in co-teaching, the extent to which co-teachers collaborate with each other and general teachers' training. Also, she felt disappointed with special education consultant, because he did not implement a common training between the general teachers or the directors of the schools with STs. Moreover, her disappointment increased when she realized by discussing with him that he was not informed about the co-teaching method (i.e. implementation, teachers' roles and responsibilities).

Both teachers mentioned various challenges in relation to teaching blind children. They both said that the blind children's handbook in Braille language did not include figures and images which negatively contributed to P's learning, especially in the subject of Geometry. Hence, Betty described teaching blind children as the most significant challenge for her, because she saw sciences as including figures, specific terminology and thus, requiring visual skills. However, they both saw the fact that P was a gifted child as facilitating the process of teaching and learning and they both saw various factors, i.e. type/severity of child's SEN and child's age, as influencing this process.

Also, both teachers saw the way co-teaching is implemented by the Greek ministry as negatively contributing to the learning of children with SEN. Betty claimed that although children are entitled by the law to be supported by a special teacher in every subject, the Ministry hires only special classics, maths and physics, but no teachers of other specialism i.e. English Language. Also, Tina negatively perceived the fact that STs change schools every academic year.

Both teachers suggested legislative changes in relation to co-teaching implementation and co-teacher's roles. Specifically, they both stressed that co-teachers' roles should be officially allocated and shared and there should be an officially scheduled planning time that could facilitate teachers' collaboration. Betty also believed that the co-teaching aim and the term definition should be officially determined. Also, Betty suggested STs adopting an active role and exchanging roles with GTs, while Tina stressed that both teachers should be responsible for all children. At a practical level, Betty viewed co-teaching as a method which could be implemented across the classes only with the use of ICT facilities.

Both teachers focused on teacher training. They both suggested that GTs should be provided with training opportunities about co-teaching, while Betty suggested common training between GTs and STs. Furthermore, Betty suggested that all teachers should receive training in teaching theories and having adequate subject knowledge background. Lastly, Betty perceived experience in co-teaching as being equally important, if not more important than training.

Both teachers perceived teacher's personality and personal characteristics (i.e. willingness to collaborate) as facilitating co-teaching. Tina saw that GTs across the classes should change their way of teaching and not be suspicious regarding the presence of STs in the classrooms. Betty believed that both teachers should always try to make the first step for communication. At a practical level, both teachers mentioned various factors that facilitate teachers' collaboration across the classes, such as co-teacher's same subject's specialism, STs being hired on time and not changing schools or avoiding alterations in the school timetable.

Lastly, both saw several factors as facilitating the teaching of blind children, such as ICT availability, handbook alterations, flexible curriculum, and employment of STs in all subjects. Also, Tina stressed that teachers should aim at children's social skills development, and thus suggested using teamwork and grouping activities.

Outcomes of co-teaching

Although both teachers saw that co-teaching was helpful for P, Betty stressed that it did not dramatically affect her academic performance because P was already a very high achiever student. Similarly, P said that co-teaching did not affect her academic performance and added that her knowledge in Maths was not developed as a result of co-teaching. Interestingly, although P had positive views about the co-teaching method, she expressed her preference for not having two teachers in her classroom for the next academic year, feeling that she did not actually need it. Lastly, Betty saw various factors as influencing the co-teaching academic outcomes to children with SEN across the classes, such as child's academic performance or whether the child's subject knowledge background is adequate.

Both teachers saw that co-teaching had positive social effect on P. Tina saw P's interaction with her classmates during the breaks as having increased and mentioned positive outcomes regarding improved friendships. However, P saw the fact that both STs escorted her during the

breaks as limiting her interaction with her classmates and described this as a co-teaching disadvantage to her.

"I am collaborating less with my classmates since Ms Tina came to the classroom...because Ms Tina is always sitting next to me....I usually collaborate with Ms Tina...so, the other children become more shy...compared to the times that there was not a second teacher in the classroom...this is because there is always a teacher sitting next to me" (P)

P also expressed her preference interacting with her classmates during the break and not only with the STs.

"....I would prefer being with my classmates as well...but it's ok...Sometimes special teachers invite some of my classmates as well...to go altogether for a walk..." (P)

P also mentioned neutral views regarding improved friendships. Furthermore, P mentioned that Tina limited her interaction with her classmates during the lesson time. Lastly, Betty saw co-teaching as not affecting P's behaviour and self-confidence, which matched P's views.

Tina mentioned various academic and social benefits for children with SEN across the classes. Tina stressed that children with SEN could benefit from the extra individualised and tailored support that STs provide. Also, Tina viewed the co-teaching approach as promoting their inclusion in a mainstream classroom and limiting their isolation and segregation. However, Tina saw that STs whispering may confuse them, because they hear two voices simultaneously. Indeed, P agreed with Tina and saw that hearing two voices simultaneously was the only disadvantage of co-teaching in both Humanities and sciences:

"When Ms Mary or Ms Tina are speaking to me with the other teacher at the same time, then I am getting confused, and sometimes they are explaining to me things that I already know them. Hearing two teachers speaking at the same time it's a little bit confusing...."

(P)

Both teachers mentioned that co-teaching did not academically affect the remaining children in the classroom. However, Tina stressed that all children's attention was distracted as a result of her interaction with P. She also saw that her presence in the classroom made them feeling nervous or uncomfortable, because they perceived her as "second judge" in the classroom who assessed their answers. At a social level, Tina saw that co-teaching had positive outcomes for all children, e.g. social skills development, acceptance of diversity and self-awareness through interaction and collaboration with children with SEN.

At a personal level, both co-teachers mentioned that their professional knowledge had not developed from using co-teaching but from teaching in a classroom where a child with SEN was included. Specifically, Tina explained that she learned new ways to differentiate and adapt her teaching to a child's needs. Especially, Tina saw STs across the classes as positively contributing to GTs professional development, because she perceived STs as having

specialized knowledge in teaching children with SEN. Lastly, Tina mentioned that, her co-teaching experience resulted in feeling good about herself because she positively contributed to the learning of children with SEN.

Conclusion

Both pairs viewed co-teaching in a narrow way. This was also reflected reflected in the allocation of responsibilities and practices which both pairs used. Namely, they viewed co-teaching as an individual or extra support to one child with SEN provided by the STs. Thus, the GTs' role included responsibilities regarding all children, while the STs' role focused on P. STs occasionally intervened with all children's learning; however, the General classics teacher and the special physics teacher saw this as noisy process expressing negative views about the idea of STs assisting all children. Bad relationships or limited communication between the co-teaching pairs was also mentioned as a further obstacle for the ST's role expansion. Also, it seems that the term used in the Greek educational context ("parallel support") limited all teachers' perceptions in viewing co-teaching as a method limited to individual children

As a consequence, the only co-teaching model both pairs used was the "one teach one assist". It has been noted through this case study that P was perceived by both pairs as very high achiever student and thus, limited academic intervention and differentiation was used regarding P. Although P was perceived by both pairs as a child with social difficulties, social intervention practices were not used during the lesson. It seems that, although children in both Humanities and Maths were sitting in tables of four children, there was not any peer interaction and collaboration. Also, while both STs intervened into P's social difficulties during the break, P mentioned that this intervention actually limited her interaction with her classmates.

Both pairs mentioned that their collaboration was limited. The first pair in classis described their collaborative experience as neutral to negative due to the total lack of communication between them, while, the second pair described their experience as positive but also included various disagreements related to P. The most dominant factors that both pairs saw as limiting their

collaboration were the fact that STs change between schools and the limited time for communication. Interestingly, the different subject specialism between the co-teachers in Maths was mentioned a further obstacle. Thus, both pairs suggested legislative changes aiming to determine issues such as teachers' roles, GT's training and the need for further collaboration as important. Regarding the outcomes of co-teaching to P, the co-teaching pairs in Maths saw positive academic outcomes and social outcomes, while the pair in Humanities did not see that co-teaching dramatically affected P at academic, social and behavioural level. Similarly, P did not see any change in all the above levels as a result of co-teaching, either in Humanities or in Maths. Interestingly, while both STs saw P's interaction with her classmates during the breaks as having increased, it was noted that P stressed exactly the opposite.

4.2.3 Third case study: Co-teaching in a classroom included a child with Autism

Introduction

This case study includes two sub-cases of co-teaching in relation to the same student and classroom (see Appendix 10). In this classroom a thirteen years old boy with Autism (L) was included and attended the first grade of middle school. L was identified by KEDDY as needing *co-teaching* in the classroom.

However, both co-teaching pairs believed that L could adequately attend the lesson without receiving extra academic support. Both pairs described L as a smart child with good school performance in both humanities and sciences and a child who was interested very much in his academic improvement in all school subjects. In contrast, L perceived himself as having serious difficulties in concentration and as needing extra academic support.

"I am a person who faces difficulties and I can not easily concentrate and pay attention on something so, I need help..." (L)

These difficulties were also confirmed by both co-teaching pairs. Also, both pairs explained that he liked painting during the lesson, which was also confirmed by L and observations. Lastly, L mentioned that his classmates also viewed him as having no need for extra support due to his good school performance.

At a social level, both co-teaching pairs believed that L did not have social and interaction difficulties and described L as a child who had friends. However, the classics GT mentioned that L occasionally started arguments with his classmates and did not always have good relationships with them.

1st Sub-case

This case includes two classics teachers, one General (Niki) and one special teacher (Kate) (see Appendix 10). L was supported by Kate in all classics subjects for eight teaching hours in total per week.

Although both teachers described L as having increased lesson participation and good school performance in classics, L was withdrawn out of the class in some subjects. Specifically, in the subjects of Greek literature and Modern Greek language L was usually included in classroom, but in the subject of Ancient Greek language he was usually been withdrawn out of the class. This decision was exclusively based upon Kate, who mentioned several reasons why she took that decision. Firstly, Kate explained that L's wish for academically improvement support influenced her to consider that the approach of withdrawing L out of class would further benefit him. Secondly, Kate explained that her intention was to help children with SEN across the classes to be independent increasing also their self-confidence and self-awareness and she saw that this aim could be better achieved by withdrawing children out of class. Niki also expressed her preference for combining the in and out of class support; she saw this approach as more beneficial for children with SEN compared to solely in class support.

The time schedule in which L was supported by Kate was flexible and was changed weekly based on Kate's personal decision. Specifically, Kate stated that she personally chose the number of teaching hours per subject that L would be supported in her per week and specifically in which subjects.

Kate also stated that she personally chose whether L would be included in the classroom or not. Kate explained that the lesson content that Niki would present in the classroom determined whether she withdrew L out of class or not. Namely, if she had not taught to L – out of the classroom – the lesson content that Niki would present in the classroom at that teaching hour, she made a decision to include L in the classroom. Otherwise, she decided to withdraw L out of classroom to teach the new lesson content. This is because Kate saw the time in the main classroom as a “lost time”, in which she could not efficiently support L.

In terms of the teachers' training, Niki reported that she did not attend any co-teaching training and has not any other co-teaching experience before. However, Niki attended a seminar about SEN and in teaching differentiation and perceived this training as insufficient to undertake the role of co-teacher, because it did not include any information about co-teaching. Lastly, Niki considered that GTs' training in co-teaching was important, because GTs in general do not have much knowledge or experience in co-teaching and in teaching children with SEN. Kate had a Master's degree in SEN and had attended relevant seminars. Also, she was aware of the co-teaching method and various models having attended a relevant in-service training and a Master's session. Kate saw this training as having various weaknesses. Specifically, Kate saw that this training usually included information not closely associated with the method of co-

teaching and was mainly focused on theory without including workshops. Lastly, she viewed training in general as inadequate and far away from praxis.

Understandings of 'co-teaching'

Both teachers perceived the term co-teaching as extra support provided by a special teacher to an individual child who was identified as having SEN. Both teachers explained that they saw co-teaching in this way because it is implemented in this way. They mentioned that the responsibility of teaching, of lesson planning and of all children in a classroom was not a shared one.

Although Niki saw co-teaching as in-class support, Kate set as priority the individual child's needs to be met; thus, she expressed her preference for an approach which could combine the in- and out-of-class support. Kate explained that in the past she viewed and practised this support as solely in class because children's expressed wish was to be included in the classroom. However, she said that her experience in supporting children with SEN in the classroom and the way co-teaching is implemented in the Greek educational content influenced her perceptions of this issue. Namely, she viewed that children with SEN usually do not have adequate subject knowledge and thus she perceived that they could not be academically supported in the classroom in an efficient way. She viewed the fact that she changed schools and pupils every year as unhelpful in academically supporting children efficiently and thus, to gradually include them in the classroom. Furthermore, Kate justified her perception by claiming that the combination of in- and out-of-class support is also officially determined by the law. Lastly, while Niki saw this provision as aiming at academic improvement, Kate viewed saw it as about academic and social skills development and the development of a sense of security.

Co-teachers' roles and perceptions of them

Both teachers perceived Niki's role as including various responsibilities regarding all children – including L – in the classroom, such as presenting the lesson content, assigning exercises and activities, assessing-grading all children's learning and homework, managing all children's behaviour. Both teachers saw Kate's role as focusing on L in terms of the following: 1. sitting next to L and assisting him, 2. helping him to be concentrated, 3. differentiating the presentation of the lesson content, 4. keeping notes on L's notebook, 5. mediating on L's learning. All the above co-teacher's actions were also confirmed by L and observations.

Both teachers saw the ST's role as solely responsible for an individual child and specifically for L. Furthermore, Kate considered that STs were responsible for finding solutions on issues relevant to how co-teaching could be implemented and on how problems related to the individual child could be managed. By contrast, both teachers perceived the GT's role as responsible for all children, while Kate added that Niki had the leading and teaching role in the classroom, which was also confirmed by observations.

Intervention to all children by ST

Both teachers mentioned that in the classroom there were two more pupils who needed extra support. Specifically, Niki assumed that these children may have SEN but were not officially identified by KEDDY. However, both teachers mentioned that Kate did not intervene academically or behaviourally with the above children or with any other child except L, which was also confirmed by observations.

Both teachers and L were positive about the idea of STs assisting all children in the classroom. Although, both teachers saw that this assistance could be provided through the method of grouping and teamwork activities, they raised concerns whether this could be feasible in a more extended way. Both teachers saw secondary school factors as limiting the use of teamwork activities and thus, the ST's role was limited to individual children. Specifically, both teachers viewed that the lesson time duration is inadequate and grouping as a time-consuming method.. Also, they both saw the fact that the subjects in secondary schooling are very demanding as an obstacle to the use of teamwork and grouping activities. Niki saw team-work activities as a noisy process and stressed that the successful implementation of this approach depends upon various issues, such as the children and the number of children that are included in the classroom, the way children are grouped, and the availability of ICT facilities.

Additionally, Kate viewed the way co-teaching provision is implemented in the Greek educational context and the GTs' negative attitude towards STs as responsible for limiting the ST's role to individual children. Specifically, Kate explained that the ST's role expansion has not yet officially been determined by the law. She also viewed the other children with SEN as not being her own responsibility but as being the ST's responsibility who was responsible for the integration class that was operated in the school. Moreover, Kate saw the increased responsibilities that GTs have, their limited experience in co-teaching, their intention to use only the traditional way of teaching and their hesitation to give to STs further responsibilities as barriers to the ST's role expansion. Lastly, Kate saw the fact that STs work in various schools per day and the limited time for co-teacher's collaboration as further obstacles.

Academically-oriented practices

Models of co-teaching

Evidently, the only model of co-teaching perceived by both of teachers and L as being implemented was the *one teach-one assist*, which was also confirmed by observations. This was implemented with Niki presenting the lesson and circulating among the tables, while Kate provided academic and behavioural support to L, sitting next to him.

Regarding the reasons why the various models of co-teaching were not implemented in the classroom and across the classrooms, Kate reiterated all the factors that limited the ST role to individual children (see above: Intervention to all children by ST).

Teaching methods

A teacher-centred way of teaching was observed in the lessons; Niki was presenting the new lesson content while children were listening. Notwithstanding, Niki was observed to interact with all children, including L, aiming to ensure their understandings and to help them to recall prior knowledge when children raised their hands. She also interacted with L to control his behaviour. Lastly, Niki was the only one who wrote on the board.

Academic intervention practices

Also, during the lesson presentation further strategies were observed to be followed by Niki, such as teaching strategic skills, providing explanations, clarifications, examples from daily life, repetitions, connections to student's experience and previously learned material. Niki mentioned that she used such methods in order to academically support all children, including L. In terms of low-achieving students, Niki said that she provided further explanations and clarifications regarding the various exercises and test questions, by circulating among their tables. Also, Niki mentioned that she asked Kate to withdraw L and some other low-achiever students before a test begins, so that Kate can provide further explanations-clarifications to them.

Observations revealed that during the assessment of learned content, Niki was trying to increase all children's participation and ensure their understandings by asking various questions to them. However, observations showed that she interacted only with children who raised their hands. Also, Niki had limited interaction with L during the lesson, which was only when L raised his hand. He was always raising his hand voluntarily without being called on by Kate and most of the times he answered correctly. Moreover, he was observed to recall prior knowledge during the learning assessment process, to talk about or to use a strategic skill, to clarify or elaborate on content and to ask a query.

Furthermore, Kate mentioned that she supported L academically by providing further explanations – clarifications related to the lesson content presentation assisted him on the various exercises and mediated his learning. However, observations revealed that Kate had limited interaction with L, who interacted more and asked his queries to Niki. If we consider the out-of-class support to L as an academic intervention practice, it must be pointed out that Kate tended to give L extra exercises after completing the subject material ones, and further tests, which was also confirmed by L. Kate explained that these extra exercises and tests were based upon L's wish to improve academically.

Differentiation

Both teachers stressed that no differentiated assessment, test or exercises were provided to L, which was also observed. Although, Niki mentioned that she is entitled to use adapted assessment questions (i.e. fill up blanks), she explained that due to the fact that L had extra support from Niki and good school performance, this was unnecessary. She also mentioned several secondary schools' limitations (e.g. limited lesson time duration, large number of students, inflexible curriculum, predetermined subjects' content) that negatively contributed to the use of *differentiation*.

Socially-oriented practices

Limited Teamwork activities-grouping

From all perspectives, including L, and observations it was confirmed that teamwork activities, peer interaction and collaboration were not implemented. Teachers explained that their practices aimed mainly at children's academic improvement and not at their social skills development.

Regarding the reasons why these practices were not used, both teachers repeated the same reasons that they mentioned above about the lack of team/group work activities (see *Intervention to all children by ST*).

Social-behavioural intervention practices

Both teachers mentioned that they did not intervene with L's social skills development and behavioural improvement; because they saw that he did not need it.

Co-teachers' collaboration

Both teachers claimed that they communicated about L's progress and mainly about what kind of exercises Kate worked on with L out of the classroom and what Niki did in the classroom with the remaining children. In contrast, they have never planned the lesson jointly and there was not any feedback regarding Niki's lesson presentation.

Both co-teachers described their collaborative experience as being positive. Interestingly, Niki saw the fact that they both did not intervene in each other's roles as positively influencing her perception towards their collaboration. However, both felt that they did not collaborate extensively or as much as they wanted. At a systemic level, both teachers saw the lack of any official scheduled planning time as impeding their collaboration.

Factors which impede and facilitate co-teaching

Both co-teachers mentioned various factors as negatively contributing to their collaboration and co-teaching. At a practical level, Kate saw the fact that STs in general change between many schools every academic year as a barrier to co-teachers' collaboration. At a personal level, Kate viewed the limited collaboration, lack of communication and selfish emotions as negatively contributing to teacher's collaboration across the various classes.

Moreover, Kate focused on various issues related to GTs, such as their way of teaching, their limited knowledge or experience in co-teaching and in teaching children with SEN, as factors impeding co-teaching across the classes. Specifically, she stressed that GTs are not used to collaborating or coexisting with another teacher in the same classroom. Kate added that the co-teacher's different knowledge background across the classes may cause problems to their collaboration.

Both teachers mentioned that they did not face significant problems and obstacles. However, Niki saw the presence of another teacher in the classroom – especially at the beginning – as a challenge, because this made her feel anxious. Lastly, Kate mentioned the inflexible curriculum as a major obstacle in relation to teaching children with SEN.

Both co-teachers perceived teachers' personal characteristics as facilitating co-teaching i.e. willingness to collaborate, acceptance of other's different experience or knowledge background. Also, Kate saw communication between teachers as the most important factor for teacher's successful collaboration. However, Kate suggested that STs across the classes should always try to make their presence in the classroom as discreet as they can aiming not to cause noise.

Both teachers suggested legislative changes in relation to co-teaching implementation and to the STs' employment. Specifically, Kate stressed that there should be an officially scheduled planning time that could enhance teachers' active collaboration. Also, they both mentioned that STs should be hired at the beginning of the academic year, while Kate added that STs should not have to work at different schools in the same day and change schools every academic year. Lastly, both teachers made suggestions that teacher training in co-teaching should include workshops. Kate added that there should be a common training between the pairs of GTs and STs, who work in the same classroom, which should include teacher's placements in schools and case studies presentations. Niki suggested longer duration in training conducted by experienced trainers in co-teaching.

Outcomes of in and out of class support

Both teachers stressed that L improved academically as a result of in-and out-of support, including L himself:

“...at the beginning (of the academic year) I was a low-achiever student. I was facing difficulties to read, but now everything is fine...” (L)

“....now I can do my homework more easily and more quickly. I just need only one hour to do my homework...” (L)

Regarding the advantages of L's inclusion in the classroom, both teachers observed increased lesson participation and concentration when L was included in the classroom. Hence, Kate saw that his self-confidence and self-awareness grew. But, while Kate saw behavioural improvement, Niki saw that this support did not affect his behaviour. Lastly, teachers did not view the fact that Kate was sitting next to L as negatively contributing to his social stigmatization. Interestingly, L expressed his preference of sitting next to a special teacher rather than sitting alone, because he saw that in this way he receives extra academic support:

“I like teachers sitting next to me on the table... because at the beginning (of the academic year) I was a low-achiever student. I was facing difficulties to study... but now everything is fine...” (L)

However, both teachers mentioned that the out-of-class support has several disadvantages for L. Kate considered that this out of class support negatively influenced his lesson participation and concentration in the classroom. She explained that L already knew the lesson content and thus, did not have any learning motivation, which was also confirmed by L:

“...when I am in the classroom without the parallel-support teachers, I am already aware of the lesson content and this sometimes is very boring...” (L)

Kate added that L gradually lost his motivation to work at home. Also, Niki mentioned that the fact that L was withdrawn out of class very often resulted in his social isolation from their classmates. In contrast, L saw that the out-of-class support was very helpful for him, because it helped him to effectively work on his own in the classroom when Kate was absent. Moreover, while L had positive views about receiving extra help inside the classroom, he expressed his preference for being withdrawn out of class. This is because he saw the classroom as a noisy environment:

“Yes, I would rather most of the times...no...all of the times...all of the year to be out of the classroom...because of the noise...The other children are making noise... it's more quiet out of the classroom...” (L)

Regarding all children, Kate believed that focusing mainly on P, resulted in co-teaching not having much academic effect on all children. Conversely, Kate felt that her presence in the classroom increased children's concentration, lesson participation, and learning motivation and positively affected their behaviour management. However, she did not mention in what ways and how she affected all children in the above dimensions. Also, Kate saw that co-teaching had positive social outcomes for all children, i.e. improvement of self-awareness through interaction with children with SEN. Furthermore, both teachers did not see that co-teaching had any disadvantages for all children.

At a personal level Niki saw co-teaching as not having much effect on her professional development.

2nd Sub-case

The second case included one General Maths teacher (Anna) who was also the director of the school and one special maths teacher (Lucy) (see Appendix 10). Co-teachers collaborated in the subjects of Maths for four teaching hours per week in total and L was fully supported in the classroom.

In terms of the teacher training, Lucy reported that she had not attended any specific training in co-teaching or in SEN and has no other previous co-teaching experience. Lucy has a Master's degree in SEN and has attended relevant seminars. Also, she was aware of the co-teaching method and various models having attended relevant in-service training. Lucy saw this training as insufficient having various weaknesses; specifically, content of limited relevance to the method of co-teaching was covered. She added that this training did not include information

about social intervention practices at all. Thus, she suggested training which would be conducted by specialists in co-teaching and would include information about the co-teaching approach and the co-teacher's roles.

Understandings of 'co-teaching'

Both teachers perceived co-teaching as extra support to an individual child who was identified as having SEN. Both teachers explained that they perceived this support in this way because they were influenced by the way it is implemented based on their experience, mentioning that the responsibility of teaching, of lesson planning and of all children in a classroom was not a common one. Particularly, Anna saw this support as one teacher teaching and thus having the leading role, whilst the other assisted one child individually.

While Anna saw this support as an in-class, Lucy viewed that the out-of-class support could be combined with in-class support aiming to enhance child's academic progress. Lastly, while Anna saw this support as aiming to the individual child's academic development, Lucy saw child's academic and social skills development as well as child's psychological support as the aim of this provision.

Co-teachers' roles and perceptions of them

Both teachers perceived Anna's role as including various responsibilities regarding all children – including L – in the classroom, such as presenting the lesson content, controlling the behaviour, assessing-grading all children's learning and homework and managing all children's behaviour. Both teachers perceived Lucy's role as focusing on L in terms of the following: 1. sitting next to L and assisting him, 2. helping him to stay focused, 3. differentiating the presentation of the lesson content, 4. mediating on L's learning, 5. keeping notes on L's notebook during the lesson presentation. All the above co-teachers' actions were also confirmed by L and observations.

In terms of how teacher perceived each other roles, both saw Anna as having the leading role in the classroom, while Lucy as having an assistant role to solely L, which was also observed.

Intervention to all children by ST

Both co-teachers mentioned that in the classroom there were two more pupils who needed extra support. However, from the teacher's perspectives and the observations it was confirmed that Lucy did not intervene academically or behaviourally with all children. However, Lucy conceded that she occasionally and indirectly helped all children in the classroom by providing further explanations or clarifications in relation to the lesson content presentation. These explanations took place only after Anna asked her opinion about an issue, but this was never observed. Also, she tried to speak with some of them during the breaks in order to psychologically support them.

Both teachers and L were positive about the idea of STs assisting all children in the classroom. Both co-teachers said that assistance to all children by STs could be provided through the method of grouping. In addition, Lucy saw grouping approaches as a way of preventing a child's

stigmatization, because the ST could rotate among many children without just sitting next to a specific child. However, Lucy raised concerns as to whether this could be feasible in a more extended way. Initially Lucy viewed GTs as responsible for the limited use of grouping approaches across the classes, because she saw them as unwilling to change their traditional way of teaching and as unaware of such methods. In contrast, Lucy saw STs as familiar with such approaches. Furthermore, Lucy viewed that assisting all children depends upon the type/severity of children's disabilities that are included in the classroom and all children's age or grade. Lastly, Lucy set the co-teacher's active collaboration as a precondition for grouping approaches.

Academically-oriented practices

Models of co-teaching

The only model of co-teaching perceived by both teachers and L as being implemented was the *one teach-one assist*, which was confirmed by observations. This was implemented with Anna presenting the lesson and circulating among the tables, while Lucy provided academic and behavioural support to L, sitting next to him

Teaching methods

A teacher-centred way of teaching was observed in the lessons. Namely, Anna was observed to present the new lesson content, while children were hearing this presentation. Also, Anna was observed to interact with all children, including L, aiming to ensure their understandings and to help them to recall prior knowledge. But this interaction was mainly placed only when children raised their hands. She also interacted with L aiming at controlling his behaviour. Lastly, Anna was the only one who wrote on the board.

Academic intervention practices

Also, during the lesson presentation further strategies were observed to be followed by Anna, such as teaching strategic skills, providing explanations, clarifications, examples from daily life, repetition, connections to student's experience and previously learned material. Anna mentioned that she used such methods in order to academically support all children, including L and low-achieving students. Anna also added that she tended to solve exercises on the board in order to help all children solving similar exercises on their own and assigned easy to solve exercises and activities such as homework, which was also observed.

Anna added that she used simpler questions in order to increase and ensure the lesson participation of L and other low-achieving students, which was confirmed by Lucy. Observations revealed that during the assessment of previously learned content and the lesson presentation Anna was trying to increase all children's participation and ensure their understandings by asking various questions to them, but she interacted mainly with children who raised their hands. Interestingly, Lucy stressed that Anna's interaction with L increased very much and she saw that Anna equally interacted with L and sometimes more often than she did. Similarly, L mentioned that he tended to ask both co-teachers about his queries. Lucy saw that L's good

school performance positively contributed to Anna's increased interaction with L. Therefore, Lucy felt that support for L's learning was their shared responsibility. Lucy stressed that this impressed her because usually GTs across the classes see individual children as being solely STs' responsibility and they do not interact with them during lesson time. Lucy explained that GTs' limited specialist knowledge about teaching children with SEN affected negatively GTs interaction with children with SEN across the classes. However, observations revealed that Anna occasionally interacted with L, but mainly with the remaining children. This interaction mainly took place when L raised his hand voluntarily. L was observed to recall prior knowledge and, to clarify or elaborate on content, largely answering correctly.

Lucy mentioned that she academically supported L by providing further explanations and clarifications related to the lesson presentation and she tried to increase his participation by helping him to be focused. Observations confirmed this and revealed an increased interaction between Lucy and L. Surprisingly, L was working, interacting and asking his queries solely to Lucy and not to Anna. Lastly, it appears that L raised his hand to interact with Anna on only limited occasions.

Interestingly, the co-teachers were observed to interact and communicate. This took place when Anna circulated among tables aiming to monitor children's learning and asked Lucy whether L understood the lesson content.

Differentiation

Both teachers and L mentioned that no differentiated assessment or exercises were used during the lesson.

Socially-oriented practices

Teamwork activities-grouping

From all perspectives, including L, and observations it was confirmed that teamwork activities, peer interaction and collaboration were not implemented. Regarding the reasons why these practices were not used, Lucy mentioned secondary schools' limitations (i.e. limited lesson time duration, various and demanding subjects, large number of students in the class, exam-oriented secondary schooling). Also, Lucy saw that such approaches need specialist knowledge, which GTs across the classes and herself do not have. Furthermore, both teachers mentioned that L did not have severe social difficulties and thus, they did not need intervention. Lastly, Lucy saw the fact that STs change between schools and have limited time for collaboration as negatively contributing to the use of such approaches.

Co-teachers' collaboration

Both teachers said that they communicated about L's progress. Anna also added that they exchanged views regarding her lesson presentation i.e. the choice of exercises and whether these could be solved by the students, the choice of examples and whether these enhanced children's understandings. In contrast, they have never planned the lesson together.

Both co-teachers described their collaborative experience as being positive, without any disagreements. Interestingly, Anna saw Lucy's presence in the classroom as very discreet as positively contributing to their collaboration. However, Lucy viewed that they did not collaborate extensively or as much as she wanted. Lucy viewed the fact that she worked at different schools every day and changed schools every academic year as impeding their collaboration.

Factors which impede and facilitate co-teaching

Both co-teachers mentioned various factors as negatively contributing to their collaboration and co-teaching. Lucy also saw the fact that STs are not hired at the beginning of the academic year combined with the inflexible timetable across the secondary schools, as negatively contributing to the successful implementation of co-teaching. At a personal level, Anna saw teachers' personal characteristics such as a critical/censorious attitude and selfish emotions (i.e. feeling that she/he knows everything) as negatively contributing to teacher's collaboration across the various classes.

Both teachers mentioned that they did not experience significant problems and obstacles. However, it is noteworthy that Anna saw the presence of another teacher in the classroom and the inclusion of a child with SEN as a challenge, because this made her feel anxious. Consistent with Anna's argument, Lucy viewed GTs across the classes as suspicious about the presence of STs in their classroom.

Thus, teachers suggested changes in relation to the co-teaching implementation and to the STs' role and employment. Specifically, Lucy stressed that co-teachers should extensively collaborate with each other and STs should expand their role to all children. Also, Lucy mentioned that STs should be hired at the beginning of the academic year, while Anna added that STs should be exclusively assigned to one specific school.

Furthermore, both teachers made some suggestions about teacher's training in co-teaching. While both of them suggested GTs have training about co-teaching, Anna mentioned that GTs should also try to develop their knowledge by contacting co-teaching specialists. Also, Lucy suggested efficient in-service training in co-teaching and stressed that consultants in each of the districts should also inform general and special teachers about the basic principles of co-teaching (roles, implementation).

Lastly, Lucy suggested various secondary school alterations such as extension of the lesson time duration, flexible curriculum, use of grouping-teamwork teaching methods and ICT availability.

Outcomes of co-teaching

Both teachers saw L's academic progress as a result of co-teaching, including L himself. Lucy observed increased lesson participation and concentration which was confirmed by L. Furthermore, Anna stressed that co-teaching enhanced L's understandings of the lesson content. Both teachers saw that the impact in terms of social skills of co-teaching was limited for L, on which L himself concurred. What is more, Lucy explained that L did not have any social difficulties and thus, she did not need to intervene in this area. However, Lucy saw that she could not intervene with L's social skills development, because she perceived herself as unaware of social skills intervention practices. Nevertheless, L saw that his behaviour improved as a result of co-teaching.

Both teachers and L mentioned various advantages of the co-teaching approach. At an academic level, both teachers saw co-teaching as resulting in academic improvement for children with SEN. Similarly, L had very positive views about the co-teaching approach in both humanities and sciences and felt happy having two teachers in the classroom. L explained that having two teachers helped him to learn more, to learn new ways to do his exercises and homework, to better understand the lesson content, while he saw as very helpful the differentiation of the lesson presentation that both special teachers provided to him. L also mentioned that both special teachers helped him to concentrate more on the lesson, while he related co-teaching with a more flexible way of learning:

“...The teachers of parallel support helped me to be concentrated on the lesson...”

“...The majority of children would rather to have this extra support, because they feel that they would have more free time. I think the same...” (L)

At a social level, Lucy viewed co-teaching as promoting the inclusion of children with SEN, eliminating their isolation and enhancing their social skills development. Anna saw co-teaching as positively contributing to children with SEN feeling self-confident and equal with all children in the classroom. Encouragingly, L viewed co-teaching and especially special teachers as improving the well-being of children with SEN and result in their psychological support:

“...The parallel-support teachers are new teachers in school and they let you feel free and you can think with more freedom inside the classroom...”

“...I can't imagine a child who would not like it...I mean to have a parallel support teacher who would help him/her very much and would provide to him/her psychological support...” (L)

However, both teachers and L mentioned various disadvantages of the co-teaching approach related to the way co-teaching is implemented. They stressed that STs sitting next to children with SEN may result in children's social stigmatization. Lucy also saw the fact that STs across the classes tended to escort children with SEN during the breaks as limiting their interaction with their classmates. Problematically, L saw the fact that he was hearing the voices of two teachers simultaneously combined with the various children's voices in the classroom as limiting his concentration and making him feel tired.

“...at the same time I need to hear the voice of both teachers and also the voice of 100

Both teachers mentioned that co-teaching did not academically affect the remaining children in the classroom. Although while Lucy saw that their behaviour in general was better controlled as a result of her presence in the classroom, Anna viewed that co-teaching did not behaviourally affect the remaining children. Nevertheless, both teachers did not see that co-teaching had any disadvantages for all children.

Conclusion

It has been seen that both co-teaching pairs perceived co-teaching in a narrow way. This was reflected to the allocation of their responsibilities, the practices which both pairs used and the interaction between GTs and L. Namely, they viewed co-teaching as individual or extra support to one child with SEN provided by the STs. Thus, GTs' role included responsibilities regarding all children, while the STs' role focused solely on L. As a result, the STs did not intervene in all or some children's learning. Several factors that negatively contributed to the ST role expansion were mentioned; i.e. the way co-teaching is implemented in the Greek educational context, secondary school limitations, the GTs' inexperience in co-teaching and their traditional way of teaching. Also, it seems that the term used in the Greek educational context ("parallel support") limited all teachers' perceptions in viewing co-teaching as a method that is focused to individual children. As a consequence, the only co-teaching model both pairs used was the "one teach one assist". It is worth mentioning that, although both general teachers saw that they increased all children's lesson participation, limited interaction between L and them was observed. The above finding revealed that L was perceived by general teachers as being mainly the STs' responsibility.

Also, while all teachers supported L in the classroom, the special classics teacher used to withdraw L out of the classroom, although, she saw L as a high-achieving student. This is because she saw that it would be an efficient way for academically supporting L and generally children with SEN across the classes. Interestingly, L expressed his preference for being withdrawn. However, his preference was more related to his difficulties rather than to co-teaching disadvantages, because he saw the classroom as a noisy environment in which he could not easily concentrate. However, both STs and L saw the out-of-class support as gradually limiting L's learning motivation. Lastly, differentiation, teamwork and social intervention activities were not used, because both pairs saw that these were not needed.

Both co-teaching pairs described their collaboration as positive, even though it seems that both pairs did not actually collaborate with each other, because they never collaborated in terms of the lesson presentation. The only exception to this relates to the classics co-teaching pair communicated about what kind of exercises the ST worked on with L out of the classroom. The most dominant factors that both pairs saw as limiting their collaboration were the fact that STs change between schools and the limited time for communication. Thus, both pairs suggested

official changes that would arrange issues in relation to co-teaching implementation (i.e. teachers' roles, official planning time for co-teachers' collaboration, teachers' training, STs' employment).

Regarding the outcomes of co-teaching to L, both co-teaching pairs and L saw positive academic outcomes. At a social level, both pairs saw that considered that co-teaching had a limited impact socially on L, while the classics special teacher and L saw behavioural improvement as a result of co-teaching. Finally, perhaps the most positive findings are that, L saw his concentration improvement, the psychological support and the flexible learning as the most important advantages of co-teaching on him.

4.2.4 Fourth case study: Co-teaching in a classroom included a child with Asperger Syndrome

Introduction

This case study includes two sub-cases of co-teaching in relation to the same student and classroom (see Appendix 10). In this classroom a thirteen year-old boy with Asperger syndrome (T), with intellectual disability, attends the first grade of middle school. T was identified by KEDDY as needing *co-teaching* in the classroom.

T was described by both pairs as facing serious academic difficulties in both classics and Maths. Indicatively, the Special classics teacher saw that T's writing rhythm was very slow, leading to many orthographic mistakes and having difficulty in understanding grammar and syntax. The general maths teacher had very negative perceptions about his academic abilities:

"T did not have any ability at all...he is a very low-achiever student...what could you teach him? ...we just grade him in order to help him finish the compulsory stage of education...This child does not belong here...probably belongs at another school"

(Frini)

Lastly, both special teachers viewed that T had difficulties in concentration, while his attention was often distracted.

Furthermore, both co-teaching pairs described T as having behavioural and social difficulties, such as aggressive behaviour and hostile verbal arguments with his classmates and disturbing GTs when they were presenting the lesson. T also confirmed that he occasionally made noises in the classroom, especially when the STs were absent. The Special classics teacher also described T as having limited friendships, but no interaction difficulties. Similarly, T claimed that

he had some friends at the beginning of the academic year, although he stopped speaking with them recently. While the general classics teacher perceived that these difficulties were not so serious, the special maths teachers believed that T needed behavioural and social intervention.

1st Sub-case

This case includes two classics teachers, one General (Kathrin) and one special teacher (Lina) (see Appendix 10). T was supported by Lina in all classics subjects for eight teaching hours in total per week. From all perspectives, including T, and observations it was confirmed that T had increased lesson participation in classics, raising his hand especially in the subject of literature and expressing interesting views during discussions. T also explained that he liked humanities more than Maths. Notably, T was partially withdrawn out of the class, in all classics subjects.

This withdrawal decision was exclusively based upon Lina. She explained that the positive academic outcomes of the out-of-class support on T as well as T's and her own personal preferences towards out of class support influenced her to withdraw T. Lina saw that, T, due to his academic difficulties, could not easily follow the rhythm of the classroom and thus, the out-of-class support increased his understandings and lesson participation for three main reasons. Firstly, she saw individual teaching in a separate classroom as more interesting; secondly, she believed that she could better help academically T by supporting him out of classroom than whispering in the classroom. Thirdly, she saw that by providing explanations to T in the classroom combined with the fact that T used to speak very loudly, distracted the other's children attention and caused noise. Moreover, Lina mentioned that T preferred the out-of-class support, because he benefited by further explanations-clarifications. Lastly, she included T in the classroom for some teaching hours aiming at his socialization and his behavioural skills development.

In terms of the teacher's training, Kathrin had not attended any co-teaching training or seminars in SEN and has not any other co-teaching experience before. Lina had a Master's degree in SEN and had attended a relevant seminar. Also, she was aware of the co-teaching method having attended relevant in-service training. Lina saw in-service training as having various weaknesses. Specifically, she saw trainers as lacking awareness of the co-teaching approach, and negatively perceived the fact that in the last training, teachers, – like her – undertook the role of trainer, because she saw that they did not have adequate knowledge. She viewed this training as focusing mainly on theoretical knowledge. Although Lina perceived training as helpful, she viewed experience as more beneficial for her.

Understandings of 'co-teaching'

Both teachers perceived co-teaching as extra support to an individual child who was identified as having SEN. While Kathrin saw this support as in-class support, Lina considered that in-class support would be combined with the out of class support. Lastly, while Kathrin saw this support as aiming at individual child's academic improvement, Lina – somewhat broadening the scope –

incorporated the child's academic, social and behavioural skills development as well as the child's psychological support in denoting the aim of this provision.

Co-teachers' roles and perceptions of them

Both teachers perceived Kathrin's role as including various responsibilities regarding all children –including T– in the classroom, such as presenting the lesson content, controlling the behaviour, assessing-grading all children's learning and homework. Both teachers perceived Lina's role as focusing on T. Here are several things that she did: 1. sat next to T and assist him, 2. kept notes during the lesson, 3. enhanced his concentration, 4. controlled his behaviour, 5. differentiated the presentation of the lesson content. The above actions were also confirmed by D. Also, Lina perceived herself as being responsible for escorting T during the break. Observations confirmed all above co-teachers' actions.

Both teachers saw the ST's role as solely and totally responsible for an individual child and specifically for T. Furthermore, Kathrin viewed Lina as responsible for finding solutions on issues relevant to how problems related to the individual child (i.e. behaviour problems, concentration difficulties) could be managed. Interestingly, Kathrin viewed Lina as more knowledgeable and practically better-placed to support T than herself. Regarding the whole class, both teachers perceived the GT's role as responsible for all children, while observations confirmed that Kathrin had the leading role in the classroom (i.e. taking decisions about the content of the lesson presentation).

Intervention to all children by ST

Both co-teachers mentioned that in the classroom two more pupils needed extra support, but they did not have any official diagnosis. However, both teachers agreed that Lina did not intervene academically or behaviourally with all children which was also confirmed by observations. Lina explained that assistance to all children could not be easily implemented in this specific classroom, because T's severe difficulties limited her attention to him. However, Lina said that she occasionally helped children (i.e. answered a query) who were sitting near her during the typical lesson presentation, but this was never observed.

Lina and T supported the idea of STs assisting all children in the classroom and viewed that this could be provided through the method of grouping. However, she raised concerns as to whether this assistance could be feasible across the classrooms and whether she could personally support more than one child. Surprisingly, Kathrin was troubled in relation to STs assisting all children in the classroom. She saw this would make her feel nervous, because she would not know how to handle this situation. Moreover, she raised concerns whether this could be feasible in a classroom which includes children with varied SEN, explaining also with frustration that she was unaware of the ST's actual role and what STs could do in an expanded role. Tellingly, both teachers saw the co-teacher's active collaboration and experience in co-teaching as the main precondition for STs to intervene into all children's learning.

Academically-oriented practices

Models of co-teaching

The dominant model of co-teaching perceived by both teachers as being implemented was the *one teach-one assist*, which was confirmed by all perspectives, including T, and through observations. This was implemented with Kathrin presenting the lesson and circulating among the tables, while Lina mainly provided academic and behavioural support to T, sitting next to him.

Teaching methods

A teacher-centred way of teaching was observed in the lessons. Namely, Kathrin was observed to present the new lesson content, while children were hearing this presentation. Also, Kathrin was observed to interact with all children, including T, aiming to ensure their understandings and to help them to recall prior knowledge. But this interaction was mainly initiated when the children raised their hands. Lastly, Kathrin was the only one who wrote on the board.

Academic intervention practices

Also, during the lesson presentation further strategies were observed to be followed by Kathrin, such as teaching strategic skills, providing explanations, clarifications, examples from daily life, repetitions, connections to student's experience and previously learned material. Anna mentioned that she used such methods in order to academically support all children, including T. Also, the use of ICT was referred to by Lina as framing the lesson presentation, which was also observed.

Observations confirmed that during the learning assessment process of previously learned content, and the lesson content presentation, Kathrin was trying to increase all children's participation. She ensured their understandings by asking various questions to them and interacted with all children including T, regardless of whether they raised their hands or not.

Although, Kathrin saw that she was limited in the extent to which she could help T in the classroom, she mentioned that she encouraged and ensured T's lesson participation by using simpler and reformulated questions and by giving the word to him which was also observed. Lina also confirmed that there was an increased interaction between Kathrin and T. Interestingly, observations revealed that T had an increased lesson participation (i.e. he raised his hand many times to interact with Kathrin) and interacted more times with Kathrin compared to Lina, while interacted with Lina only a few times (i.e. asking queries). This interaction was mainly when T raised his hand voluntarily, which was also confirmed by T. T was also observed to recall prior knowledge and, to clarify or elaborate on content, while most of the times he answered totally correctly. By contrast, T saw that he interacted mainly with Lina and felt more comfortable asking help from Lina than Kathrin. T also expressed neutral views or was unsure whether Kathrin academically supported him.

From all perspectives, including T, it was confirmed that Lina supported L academically by providing further explanations and clarifications related to the lesson content presentation and increased his lesson participation by helping his concentration. However, observations revealed that Lina only occasionally interacted with T and intervened with his learning, but she exclusively interacted with T and no other child.

If we consider the out-of-class support to T as an academic intervention practice, we need to say that Lina tended to provide L with extra exercises after completing the subject's material ones.

Differentiation

Regarding T, Lina said that she used the differentiation method. Lina mentioned that she differentiated the learning objectives for each subject, namely she decided which aspects of the lesson presentation were important and assigned to T to learn only these aspects. During the lesson, Lina said that she also assigned to T some further or simplified exercises, which were relevant to the lesson content presentation and based to T's abilities, but this was never observed. Teachers did not agree in terms of the extent to which differentiation in assessment was implemented. While Lina said that differentiated tests were given to T, Kathrin mentioned that the tests were the same for all children. It is worth mentioning that T answered tests' questions with Lina's help. However, they both agreed that the final exams were the same for all children and T was assessed orally.

Kathrin said that she did not give any differentiated assessment or exercises to T. Although Kathrin mentioned that she is entitled to use adapted assessment questions (i.e. fill up blanks) and she indeed tended to do this in other classrooms, she explained that due to the fact that T had extra support from Lina, she did not need to do something extra or different for him.

Socially-oriented practices

Teamwork activities-grouping

Teamwork, role play activities as well as children's grouping were mentioned by both teachers and T as being used in the classroom, but were never observed. Lina stressed that during these activities T collaborated with his classmates and not exclusively with her. Kathrin added that some teamwork activities needed children to collaborate with each other also after the end of school (i.e. cooking activity). However, Kathrin viewed that it was not easy for T to collaborate with other children after the end of school given that T lived in a village far away from the town.

From all perspectives, including T, it was confirmed that all children and T liked teamwork and role play activities. However, both teachers stressed that these activities were sometimes but not often used. Lina viewed teamwork activities as time-consuming methods, explaining that general teachers need to complete the predetermined material and thus, they had limited time for this.

Social-Behavioural intervention practices

Both teachers intervened into T's behavioural difficulties by communicating and giving advice on how to control his emotions and behaviour. Moreover, Kathrin intervened in T's behaviour difficulties in an indirect way by enhancing all children's empathy towards T. Additionally, Lina stressed that she used to withdraw T out of class in order to calm him and she usually asked him to draw a picture, which relaxed him. Lastly, Lina included T in the classroom aiming at his socialization and behavioural skills development.

Co-teachers' collaboration

Lina mentioned that they collaborated in fields related to all children's assessment issues, such as to what extent test questions could be easily answered by all children or not and how test questions could be differentiated or adapted to T's abilities. Moreover, Lina mentioned that GTs asked her advice about how T could be academically and behaviourally better supported. Nonetheless, they have never commonly planned the lesson.

Both co-teachers described their collaborative experience as being positive, without any disagreements. However, Kathrin viewed that they did not collaborate extensively or as much as she wanted. At a practical level, Lina viewed the fact that STs change between many schools as limiting co-teachers' collaboration, while both teachers stressed that time for collaboration was limited. Interestingly, Lina mentioned that she did not want to work again as a co-teacher because she did not feel very productive in this post and she felt that she could better help children academically out of the classroom.

Factors which impede and facilitate co-teaching

Both co-teachers mentioned various factors as contributing negatively to co-teaching. Lina focused on GTs across the classes who are perceived by her as having limited training in SEN, as unaware of the co-teacher's roles and as not accepting or acknowledging STs as equal teachers in the classroom.

Thus, they both viewed collaboration and communication between teachers as mostly facilitating co-teaching., and therefore they suggested official scheduled planning time, in which they would commonly plan the lesson. Also, both teachers mentioned various teachers' personal characteristics as facilitating co-teaching i.e. willingness to collaborate and to have good relationships with the other co-teacher, acceptance and asking advice from for the other co-teacher, solidarity.

Furthermore, both teachers made some suggestions about teachers' training in co-teaching. While Lina stressed the importance of GTs getting training about co-teaching, they both suggested common training between GTs and STs, providing information about the basic principles of co-teaching (roles, implementation, co-teaching models), including also workshops.

Moreover, Lina suggested changes in relation to the STs' employment. Specifically, Lina mentioned that STs should be hired at the beginning of the academic year, supporting only one child but in all subjects. Furthermore, Lina mentioned various factors related to secondary schooling (i.e. flexible curriculum, collaboration with parents) as facilitating co-teaching. Lastly, she saw that secondary special education was neglected by the government compared to primary education and she expected in the future that secondary education would be the focus of government's attention.

Outcomes of co-teaching

Lina stressed that T academically improved as a result of in and out-of-class support, a view also expressed by T himself. Also, Kathrin saw that Lina's presence in the classroom increased T's concentration.

However, Lina saw that the out-of-class support was better for T's lesson content understandings and participation compared to being in-class support. T also expressed the same view expressing also his preference being taught outside of the main classroom:

*...Because it's quieter (outside the classroom)... there is noise within the classroom
...also, (in the classroom) sometimes I am doing noise along with other children...
so, (out of the classroom) I understand better the lesson and I am more concentrated..."*

(T)

Moreover, Lina stressed that this support mainly had positive psychological outcomes for him, because he was very happy coming to school during this academic year compared to the previous year.

At a social and behavioural level, Kathrin did not bring about significant improvements for T. Nevertheless, Kathrin and T confirmed that Lina's presence in the classroom resulted in T's better behavioural management. Therefore, both teachers mentioned that all children in the classroom benefitted from T's better behaviour management. Kathrin explained that Lina helped T improved his relationships with his classmates, when he occasionally argued with his peers. However, T mentioned that both STs' presence in the classroom limited his interaction and communication with his classmates and expressed neutral views about improved friendships as result of co-teaching in both humanities and Maths. Observations revealed that children's tables were shaped a semicircle in which T was sitting on the edge with Lina sitting between him and the remaining children, thereby limiting T's interaction with his classmates in the classroom.

Both teachers saw various advantages of the co-teaching approach for children. Initially, both teachers saw co-teaching as resulting in positive academic and behavioural support outcomes for children with SEN, and according to Lina, in their psychological support as well. At a social level, both teachers viewed co-teaching as promoting the inclusion of children with SEN, enhancing their social skills development. Thus, Lina perceived co-teaching as being more effective for children with social difficulties (i.e. Asperger) being middle-achiever students.

Regarding all children, both teachers stressed that co-teaching had mainly positive social outcomes for all children, e.g. social skills development, acceptance of diversity and self-awareness through interaction with children with SEN.

However, both teachers mentioned various disadvantages of the co-teaching approach related to the way co-teaching it is implemented. Lina felt that STs sitting next to children with SEN may result in children's social stigmatization. Lina also suggested that specific children receiving individual attention by a second teacher may result in the remaining children feeling jealousy towards them. Also, Lina mentioned that her limited academic intervention with all children resulted in no impact in terms of academic outcomes for them.

At a personal level, while Lina saw co-teaching as resulting in her professional development, Kathrin expressed more neutral views.

2nd Sub-case

The second case included one General Maths teacher (Frini) and one special maths teacher (Dina) (see Appendix 10). Co-teachers collaborated in the subjects of Maths for four teaching hours per week in total and T was fully supported in the classroom. Dina explained that she chose not to withdraw T out of class aiming at T's socialization and his behavioural and social skills development.

In terms of the teachers' training, Frini mentioned that she had not attended any training in co-teaching or in SEN and has had no other prior co-teaching experience. Dina holds a Master's degree in SEN and has attended relevant seminars, even though she has not had any other co-teaching experience before. Although, Dina had attended in-service training about co-teaching, she mentioned that she was unaware of the actual aim of co-teaching, how this could be implemented and what the role of each co-teacher is. Thus, Dina saw this training as insufficient and suggested regular and common training between general and special teachers. Interestingly, Frini viewed training in general as inadequate not helpful, and far away from praxis. Lastly, Dina stressed the importance of having experience in co-teaching.

Understandings of 'co-teaching'

Both teachers perceived co-teaching as an extra and individual support to children who were identified as having SEN provided by special teachers. Both teachers explained that they saw co-teaching in this way because it is implemented in this way, as they mentioned that the responsibility of teaching, of lesson planning and of all children in a classroom was not a shared one or there was not any role exchange.

Both teachers saw this support as aiming to individual child's academic and social skills development. However, Dina added that this support helps children to be integrated in the

classroom and to reach the academic level of the other children. Moreover, Dina saw this help as in class-support and support during the breaks. In contrast, Frini explained that Dina was usually teaching T something different to the lesson content presentation or was working on different exercises and therefore, she saw that this support could be also be provided out of class as well.

Co-teachers' roles and perceptions of them

Both teachers perceived Frini's role as including various responsibilities regarding all children in the classroom, except T, such as presenting the lesson content, controlling the behaviour, assessing-grading all children's learning and homework. Frini added that she assigned homework to all children and determined the subject's content that children need to read in order for their writing to be assessed. Both teachers perceived Dina's role as focusing on P. Here are several things that they both mentioned that Dina did: 1.sat next to T and assisted him, 2.differentiated the presentation of the lesson content and the format of test questions (i.e. use of sub-questions), 3. assessed T orally, 4.kept notes on student's note-book. The above co-teachers' actions were also confirmed by T and observations.

Both teachers saw Dina's role as solely responsible for an individual child and specifically for assisting T in the classroom. Additionally, Dina viewed the ST's role as helping in the inclusion of children with SEN and enhancing all children's awareness of diversity or difference. Both teachers viewed Frini's role as responsible for all children, while Dina saw Frini as having the leading role in the classroom. Interestingly, Frini perceived herself as responsible exclusively for all children except T, who is viewed by her as being included exclusively in Dina's responsibilities:

"I did have any relationship with T...I did not become involved with T at all" (Frini)

Intervention to all children by ST

Both teachers mentioned that in the classroom there were also some other pupils who identified as having SEN. However, both teachers agreed that Dina did not intervene academically or behaviourally with all children, which was also confirmed by observations.

Dina and T supported the idea of STs assisting all children in the classroom and explained that this help could be implemented only if teachers actually co-teach, exchange roles and collaborate with each other. She also viewed that teachers' training in co-teaching and the use of grouping methods could positively contribute to the expansion of the ST's role to all children. In contrast, Frini did not support the idea of STs assisting all children in the classroom, because she personally did not like having "a second person" in the classroom circulating among tables. She also viewed this as a noisy process, which would distract the remaining children's attention.

Academically-oriented practices

Models of co-teaching

The only model of co-teaching perceived by both teachers as being implemented was the *one teach-one assist*, which was confirmed by all perspectives, including T, and through

observations. This was implemented with Frini presenting the lesson and circulating among the tables, while Dina mainly provided academic and behavioural support to T, sitting next to him.

Dina saw that the educational system is not ready to implement this co-teaching method, the various models of co-teaching and the ST's role expansion to all children. Specifically, she viewed that GTs' limited training and experience in co-teaching and secondary school limitations (small classes, large number of students in the classroom) negatively contributed to the implementation of the various models across the classes. She also viewed that educational legislation limits the ST's role to individual children and thus, suggested legislative alterations which would expand the ST's role to all children. However, she stressed the intention of the Ministry of Education to make further steps regarding this issue and she believed that in the next years there would be important changes relating to the ST's role in the classroom.

Teaching methods

A teacher-centred way of teaching was observed in the lessons. Namely, Frini was observed to present the new lesson content, while children were hearing this presentation. Frini interacted with all children, except T, aiming to ensure their understandings and to help them to recall prior knowledge. This interaction occurred even if children did not raise their hands. She also interacted with all children aiming at controlling their behaviour. Lastly, Frini was the only one who wrote on the board.

Academic intervention practices

Also, during the lesson presentation further strategies were observed to be followed by Frini, such as teaching strategic skills, providing explanations, clarifications, examples from daily life, repetitions, connections to student's experience and previously learned material. Frini explained that she did not assign to an individual child to solve an exercise on the board. This is because she preferred herself writing on the board and ensuring all children's understandings by asking various questions to all of them, which was also confirmed by observations. She believed that this is the most effective way of keeping children focused on the lesson presentation and of increasing all children's participation.

In contrast, Frini stressed that she did not academically intervene with T at all. Observations indeed revealed that Frini never interacted with T, but only with the remaining children. Similarly, T expressed neutral views or was unsure whether Frini academically supported him. Frini explained that she personally could not do something to help him; because she saw that it is difficult for her to adapt the lesson in a way that was beneficial for all students, and especially for T who faced serious academic difficulties. Thus, she viewed that a child like T "does not have a future" in the classroom where the majority of students were "normal", because she saw that T could not follow the rhythm of the remaining children.

From all perspectives, including T, it was confirmed that Dina academically supported T by providing further explanations and clarifications related to the lesson content presentation, by

helping him to stay focused and by differentiating the lesson content presentation or teaching different lesson content and exercises. Also Dina exclusively interacted with T who interacted with and asked his queries solely to Dina. T was never observed to interact with Frini or to raise his hand. T also confirmed that he interacted mainly with Dina and felt more comfortable asking help for from Dina than Frini. Therefore, observations revealed that Dina and T were detached from the remaining classroom.

Differentiation

Both teachers and observations confirmed that during lesson time Dina individually instructed T and he worked on exercises that were different to Frini's lesson presentation. Also, both teachers and observations confirmed that Dina tended to teach T different material compared to Frini (i.e. lesson content and exercises different to the remaining classroom) aiming to help T enhance skills necessary to follow the rhythm of the remaining classroom. Also, both teachers stated that differentiated assessment in the form of oral examination was used highlighting that Dina differentiated the test's questions by dividing them into sub-questions aiming to help T solve them. Both teachers stressed that Dina was responsible for any differentiation, while they both agreed that Frini did not use any type of differentiation or teaching adaptation aiming to help T or very low-achieving students in the classroom.

Socially-oriented practices

Teamwork activities-grouping

Both teachers and observations confirmed that teamwork activities, peer interaction and collaboration were not implemented.

Regarding the reasons why these practices were not used, both teachers mentioned secondary school limitations (i.e. limited lesson time duration, predetermined subject's content, exam oriented educational system), as negatively contributing to the use of teamwork activities. Also, Dina related this limitation with GTs who were not trained in grouping methods. She also added that GTs' practices aimed mainly at children's academic improvement and not at their social and emotional skills development. Interestingly, Frini stressed that she was not in favour of teamwork methods, because only the best students included in a group tended to work on the various activities.

Social-behavioural intervention practices

Dina saw that her intervention into T's social and behavioural skills was limited. She viewed that changing between schools negatively contributed to this issue. She acknowledged that teamwork activity was implemented in the school, but due to the fact that she needed to be at another school, she was unsure about the extent to which T collaborated with his classmates. However, she encouraged him to take part in any grouping activity and explained that in the ICT subject, this had in fact contributed to enhancing collaboration with his classmates. Dina also was intervened into T's behavioural difficulties by discussing with T about various issues which

caused him to feel unhappy or angry. Overall, Dina viewed that including T in the classroom provided opportunities for T's social and behavioural skills development.

In contrast, Frini viewed that she did not intervene into T's social and behavioural skills development. She saw Maths as a subject which did not give opportunities for discussions aiming at developing T's social and behavioural skills.

Co-teachers' collaboration

Frini mentioned that she did not collaborate with Dina in an extensive way. However, she conceded that they discussed with each other about what the learning objectives of the Maths subject are in relation to all children in order that Dina could differentiate and adapt her teaching and test questions to T's abilities. Interestingly, Frini said that they occasionally discussed with each other about the various teaching methods, stressing that these discussions were very general as she could discuss such issues with any Maths teacher. In contrast, they have never commonly planned the lesson and there was not any feedback regarding the lesson presentation.

Both co-teachers expressed neutral views about their collaborative experience, because they viewed that they did not collaborate extensively or as much as they wanted. Encouragingly, Dina mentioned that she wanted to work again as a co-teacher, on the condition that alterations in co-teaching implementation are introduced.

Factors which impede and facilitate co-teaching

Dina mentioned various factors as contributing negatively to their collaboration. At a practical level, Dina viewed the fact that STs change between many schools and are not hired on time and thus, the limited available time for collaboration as negatively contributing to co-teaching. She also saw the inflexible timetable across the schools and specifically in that school, as a further obstacle in implementing co-teaching.

Moreover, Dina focused on both general and special teachers' limited training in co-teaching, including also herself and viewed teachers as unaware of the actual co-teacher's roles and of the co-teaching aim. Therefore, she viewed that this limited co-teaching awareness limits the way co-teaching is implemented in Greece.

"Do you believe that I didn't know that we could do that...? After completing your questionnaire and somebody else's questionnaire, I realized that...we could have collaborated with each other in some other areas as well" (Dina)

Furthermore, Dina mentioned that special education consultants influence the way co-teaching is implemented in each district. She explained that two years ago when she was working in another district, children's withdrawal out of classrooms was not allowed by the consultant, in contrast with her present district. Lastly, Dina focused on GTs' attitudes towards STs, explaining that usually GTs who have the same specialism with STs have competitive and sometimes

arrogant attitude towards STs.

Thus, they both viewed collaboration and communication between teachers (i.e. about child's progress, exchange ideas about teaching issues) as mostly facilitating co-teaching. Therefore, Dina suggested official scheduled planning time, in which co-teachers would commonly plan the lesson. Also, Dina perceived teachers' personality as facilitating co-teaching. Thus, she suggested that teachers in general be willing to collaborate, and especially GTs to challenge their preconceptions.

Furthermore, Dina suggested alterations in relation to the ST's role and employment. Specifically, she suggested the ST's role expansion to all children in a classroom, while she viewed that an ST should be hired in one school and there should be an ST in each school in order to support any children who need help in any classroom. She also focused on teacher's training suggesting common training between GTs and STs. Lastly, she suggested that secondary school recalibrate in terms of priorities so that more attention can be paid to the enhancement of children's learning process, rather than always placing children's summative assessment and grading at the forefront.

Outcomes of co-teaching

Dina saw T's academic progress and improved performance in tests and the final assessment as a result of co-teaching; which was also reflected in T's views. However, Frini expressed neutral views explaining that she did not actually know whether T progressed given her lack of academic intervention with T. Clearly, Frini fully delegated responsibility for T's learning to Dina:

"You should ask Dina about this...I do not work with T..." (Frini)

However, both teachers agreed that co-teaching had positive social outcomes on T. Specifically, Frini recognised that T benefitted mainly by interacting and communicating with Dina. Similarly, T saw the fact that he frequently communicated with both STs the most important co-teaching advantage.

"T would be alone in the classroom...I would not work with him...it would be a lost time for T if Dina was not in the classroom" (Frini)

Reassuringly, Frini saw that Dina sitting next to T did not socially stigmatise him, while similarly T expressed positive views about both STs sitting next to him. At a behavioural level, while Frini saw that T did not have serious behavioural difficulties, she saw that Dina's presence in the classroom resulted in T's better behaviour management, which was also confirmed by T.

Regarding co-teaching advantages for children with SEN in general, Frini viewed co-teaching as a way of helping them academically and promoting their inclusion in the classroom. Similarly, T saw the fact that he received extra academic support by a second teacher in the classroom as the main advantage of co-teaching for him. Also, T expressed his preference for two teachers in the classroom than one in the next academic year.

Dina perceived co-teaching as being more effective for children with social difficulties (i.e. Asperger syndrome, Autism) or children with sensory needs. However, T, who was identified as having Asperger, saw the classroom environment as a noisy place and thus he viewed this as a co-teaching disadvantage. Thus, he expressed his preference for being withdrawn out of classroom for lesson, because he saw the out-of-classroom environment as a quieter place. In contrast with Dina, Frini viewed co-teaching as effective for children with mild SEN and with strong abilities at an academic level.

Both teachers did not see that co-teaching affected all children's academic progress and lesson participation. However, Frini saw that Dina's interaction with T made noise and; as a result, children's attention was occasionally distracted.

At a personal level, Frini said that co-teaching did not affect her at all or did not positively contribute to her professional development. In fact, she went as far as to imply that she felt as if the co-teacher were almost invisible:

"It was like no other teacher was in the classroom...like I was only myself" (Frini)

Conclusion

Clearly, both co-teaching pairs saw co-teaching in a narrow way. This was reflected in the allocation of their responsibilities, the practices which both pairs used and the interaction between GTs and T. Namely, they viewed co-teaching as individual or extra support to one child with SEN provided by the STs. Thus, co-teacher's roles were discrete; the GT's role included responsibilities regarding all children, while the ST's role focused only on T (i.e. assessment and lesson differentiation, behavioural-social intervention). As a result, the STs did not intervene into all children's learning and the only co-teaching model both pairs used was the "one teach one assist". Several factors that negatively contributed to the ST role expansion were mentioned; i.e. the limited awareness of the ST's role, the teacher's limited experience and training in co-teaching and their limited collaboration, the limited use of grouping methods, secondary school limitations and the educational law that limits the ST's role to individual children. Also, it seems that the term used in the Greek educational context ("parallel support") limited Maths teachers' perceptions to viewing co-teaching as a method that is focused on individual children. It is important to note that the general Maths teacher largely viewed in-class support STs provided as disadvantageous to her teaching as she saw this that would be a noisy process. Lastly, the general Maths teacher did not intervene academically with T and there no interaction between herself and T whatsoever, revealing that T was perceived by her as being totally the ST's responsibility. However, between the general classics teacher and T increased interaction was observed.

Also, co-teaching pairs implemented co-teaching in a different way with each other and in a way that was in contradiction with their own perceptions of the co-teaching aim. Specifically, although T was described by the classics teachers as a child with increased lesson participation and despite the fact that the special classics teacher saw the child's academic and social skills

development as the aim of co-teaching, T was partially withdrawn out of class by the special classics teacher. This was because she saw that it would be an efficient way for academically supporting T, expressing also her personal preferences for withdrawing individual children out of class. Interestingly, T expressed his preference being withdrawn out of class. However, his preference was more related to his difficulties rather than to co-teaching disadvantages, because he saw the classroom as a noisy environment in which he could not easily concentrate. In contrast, in Maths T was only supported in the classroom. Surprisingly, although the general Maths teacher saw a child with SEN's inclusion to the mainstream classroom as the aim of the co-teaching, she viewed that T could be adequately supported out of classroom, explaining that T was unable to follow the rhythm of the remaining classroom.

At an academic and a social level co-teaching pairs used different practices from each other. While, both used differentiated assessment in the format of oral examination, the special Maths teacher also incorporated differentiated activities during the lesson. Also, despite the fact that both co-teaching pairs saw T as having behavioural difficulties, and both pairs viewed the child's social skills development as the aim of co-teaching limited teamwork it was only the classics teachers who used social intervention activities. The Maths pair did not use collaborative activities at all. In addition to several factors that co-teachers saw as negatively contributing to the use of teamwork activities (secondary school limitations, teacher's limited training, school academically oriented), the general Maths teacher went further to categorically state that she was not at all in favour of such teamwork teaching methods.

Both co-teaching pairs described their collaboration as neutral to positive. However, it seems that both pairs did not actually collaborate with each other, because they never collaborated in terms of the lesson presentation. Indeed, they only discussed issues relevant to T to a limited extent. The most dominant factors that both pairs saw as limiting co-teaching were the facts that STs change between schools, the limited time for collaboration and the limited teacher training in co-teaching. Thus, both pairs suggested changes in relation to co-teaching implementation (i.e. official determination of teachers' roles, the ST's role expansion and on time employment in limited schools, official planning time for collaboration, teachers' common training).

Regarding the outcomes of co-teaching to T, both special co-teachers and T saw positive academic outcomes. However, the special classics teacher observed that the out-of-class support was more effective to improve T's lesson understandings compared to the in-class support. Interestingly, the general Maths teacher did not actually know whether T progressed academically, given her lack of involvement with the pupil. At a social level and behavioural, both pairs saw co-teaching as having a positive effect on T (better behavioural management, better relationships with his classmates). Similarly, T himself saw the extra academic support and the communication with both STs as the most important co-teaching advantages for him. However, T saw that both STs' limited his interaction with his classmates in the classroom. Lastly, both pairs did not see that co-teaching had any academic effect on all children.

Regarding the disadvantages in relation to the way co-teaching was implemented, the special classics teachers saw that STs sitting next to an individual child may result in child's stigmatization, while she viewed the limited academic co-teaching advantages to all children as a drawback. Lastly, it has been noted that the general Maths teacher saw the interaction between the ST and T in the classroom as a noisy process.

4.2.5 Fifth case study: Co-teaching in a classroom included a child with hearing impairment

Introduction

This case study includes two classics teachers, one General (Penny) and one special teacher (Maria) in relation to a fourteen year old girl with a hearing impairment (M) (see Appendix 10). Maria was supported by M using sign language

M attended the third grade of middle school and was identified by KEDDY as needing *co-teaching* in the classroom. M also perceived herself as needing extra help, because she saw that she usually cannot easily understand the meaning of some words and thus a teacher who knows sign language would help her considerably. At an academic level, both teachers expressed positive views about M's school performance. Specifically, Maria mentioned that she always tried her best in the classroom but she did not usually study at home. At a social level, both teachers mentioned that M did not have social, interaction and behavioural difficulties and was described as a child who had friends and was accepted by her peers, which was also confirmed by M.

M was fully withdrawn out of class and only on very limited occasions was she included in the class. Both teachers explained that they follow the guidelines that the director of the school gave to them.

"When I first came to the school, the school's director introduced me to the girl and said to me: "Your room is there..." and I asked her "Am I going to teach her in a separate classroom? And she answered "Yes, of course..." (Maria)

Interestingly, Maria explained that she preferred including M in the classroom for three main reasons. Firstly, she saw co-teaching as a model which promotes the inclusion of children with SEN in the classroom. Secondly, she viewed that in this specific classroom only seven students in total were included and thus, co-teaching could be easily implemented. Thirdly, she considered that using the sign language would not make any noise at all and would not disturb other children's attention. Similarly, Penny mentioned that she did not have any problem including M in the classroom. However, she raised concerns as to whether this would benefit M, because she was not qualified in sign language, which is viewed by her as a necessary skill for teaching M.

M was supported by Maria mainly in History, Ancient Greek language and literature. However, Maria collaborated with Penny only on the subjects of Ancient Greek language and literature, while she also collaborated with the school's director who was teaching the subject of history. Maria explained that the fact that she withdrew M out of class gave her flexibility to partially support M in all classics subjects when necessary.

In terms of the teacher training, Penny mentioned that she did not attend any co-teaching training or training in SEN and has not had any other co-teaching experience before or experience in teaching children with SEN. However, Penny attended a seminar about grouping methods and behaviour management. Lastly, Penny positively perceived the role of training in co-teaching process and in teaching children with SEN.

Maria had a Master's degree in SEN and attended a relevant seminar. Also, Maria explained that she did not so aware of the co-teaching method and various models of co-teaching but she attended Master's modules about inclusive education which she saw as being very relevant or close enough to the co-teaching method. Also, Maria mentioned that she attended an in-service training session about co-teaching. However, she saw this training as having various weaknesses. Specifically, Maria saw that this training usually included information not closely associated with the method of co-teaching (i.e. focusing on behaviour management) without providing information about the various co-teachers roles and responsibilities. She viewed the fact that she was exchanging views and experiences with other colleagues and asking the consultants about any issue that emerged as the only positive things regarding this in-service training.

Understandings of 'co-teaching'

Both teachers perceived the co-teaching as collaboration between the general and the special teacher in order to support a child with SEN included in a classroom. Interestingly, Maria saw co-teaching as a process of supporting a child with SEN, in which she considered the GT as the "basic" teacher and the ST as the "support" teacher who adapts the teaching or lesson content to children.

Also, while both teachers saw co-teaching as an in-class support, Maria added that with some pupils, (i.e. for pupils with serious academic problems or inadequate subject knowledge) the combined approach of in and out of class support may be more helpful. Lastly, Maria viewed the child's academic and social skills development as the aim of co-teaching.

Co-teachers' roles and perceptions of them

Both teachers perceived Penny's role as including various responsibilities regarding all children in the classroom, such as presenting the lesson content, controlling the behaviour, assessing all children's learning – except M – due to the fact that she did not know sign language. Both teachers explained that Penny was responsible for grading M. However, they communicated and collaborated with each other about this. Both teachers perceived Maria's role as focusing on M and explained that Maria was teaching M individually in a separate classroom. However, when M was included in the classroom, both teachers mentioned that Maria undertook the following duties: 1. sat next to M and assist her, 2. differentiated the assessment, 3. explained in sign language what Penny was saying during the lesson presentation, 4. kept notes in student's note-book and explained words with difficult meaning in written language. The above co-teachers' actions were also confirmed by M and observations.

Both teachers saw Maria as having a supportive role and as solely responsible for an individual child and specifically for assisting M. Specifically, Maria saw the ST's role as including the responsibility of adapting the GT's teaching. Both teachers viewed Penny's role as being responsible for all children. Moreover, Penny saw herself as having the leading role in the classroom, while Maria describes Penny as the "basic" teacher.

Intervention to all children by ST

Both teachers mentioned that in the classroom there were also some other pupils who identified as having SEN. However, both teachers agreed that Maria did not intervene academically with all children with or without SEN, which was also confirmed by observations. Nevertheless, Maria mentioned that she occasionally provided further explanations to children who were sitting near her. Additionally, Maria herself and observations confirmed that Maria intervened behaviourally with the remaining children and especially with one boy with serious behavioural difficulties included in the classroom.

"I behaviourally and socially intervene with the remaining children...but I do it in a way that children would perceive it as an advice...I think that the social and behavioural issues should be set in priority...and afterwards the academic issues...and this applied to all children" (Maria)

Penny and M supported the idea of STs assisting all children in the classroom. By contrast, Maria raised concerns as to whether this assistance could be feasible across the classrooms for various reasons. Firstly, she explained with frustration that she was unaware of the ST's actual role and what STs could do in an expanded role. Secondly, she viewed secondary school limitations (i.e. limited lesson time duration, subjects' content perceived as demanding) as a further obstacle for the ST's role expansion to all children. Moreover, she saw this as a

complicated process, because it needs approval by the school's director. Interestingly, she mentioned that she actually had an experience in which two girls identified as needing co-teaching were included in a classroom. She explained that the fact that these two girls had different needs, different behavioural issues and different knowledge background made her feel frustrated and unable to simultaneously support both of them.

Maria saw that grouping teaching methods would facilitate the process of STs assisting all children and the implementation of the various models of co-teaching. However, she mentioned various inherent factors that would negatively contribute to the use of such methods. The reasons for these limitations were related to the GTs across the classes. Firstly, she saw GTs as having limited training in grouping methods, considering them as a noisy and complicated process. Also, she explained that GTs feel pressed by the limited lesson time duration, which is why they rarely use such methods. Lastly, she saw GTs as having high academic expectations by all children focusing mainly on children's academic skills development. Additionally, she viewed children in general as being unfamiliar with grouping methods and the educational system as as unready or ill-prepared to implement the various models of co-teaching.

Lastly, Maria saw various preconditions for the ST's role expansion and the various models of co-teaching, such as teacher training, available time for teacher collaboration or preparation and alterations in the way of thinking of all people involved in the educational process.

Academically-oriented practices

Models of co-teaching

The only model of co-teaching perceived by both teachers and M as being implemented was the *one teach-one assist*, which was also confirmed by observations. This was implemented with Penny presenting the lesson and circulating among the tables, while Maria provided academic support to M, sitting next to her. However, from all perspectives it was confirmed that M had seldom been included in the classroom.

Teaching methods

A teacher-centred way of teaching was observed in the lessons. Namely, Penny was observed to present the new lesson content while children listened. Moreover, Penny explained that she did not utilize ICT at all, for two main reasons. Firstly, she mentioned there was not any equipment available in the classroom; secondly, she saw secondary education limitations (i.e. limited lesson time duration and predetermined subject material) as further obstacles to using such teaching methods. Lastly, Penny was the only one who wrote on the board.

Academic intervention practices

Also, during the lesson presentation further strategies were observed to be followed by Penny, such as teaching strategic skills, providing explanations, clarifications, examples from daily life, repetitions, connections to student's experience and previously learned material. Penny mentioned that she used these methods in order to academically support all children, explaining

that she tried to answer all pupils' queries and to make them feel comfortable, asking them questions. Also, Penny was observed to interact with all children, except M, aiming to ensure their understandings and to help them to recall prior knowledge. But this interaction took place when children raised their hands.

In contrast, Penny stressed that she academically intervened with M to a limited extent. Specifically, Penny explained that at the beginning of the academic year, when Maria was not hired yet or when Maria was absent, she used to answer M's queries by noting on her notebook or used to note what she needed to know for the next lesson. Penny explained that she personally could not do anything further to help her, because she did not know sign language. Therefore, Penny never interacted with M from all perspectives, including M and confirmed by observations. However, M explained that when the GTs write on the board or give her some further paper-notes, this helped significantly in understanding the lesson content, even if Maria was absent.

From all perspectives, including M's, Maria, when co-teaching with Penny in the classroom, supported M academically by providing further explanations or clarifications related to the lesson content presentation using the sign language and differentiating lesson content presentation. Moreover, M explained that Maria provided considerable support to her in relation to tests and assessment and she described it as very important support. Specifically, Maria helped M to be better prepared for a test by noting in her book or notebook what M should know very well or what the most important information was. Also, M explained that Maria helped her by providing further clarification or explaining the meaning of some difficult words.

Therefore, Maria interacted exclusively with M while M was working, interacting and asking her queries solely to Maria. Also, M was never observed to interact with Penny or to raise her hand. M also confirmed that she interacted only with Maria and felt more comfortable asking help from Maria than Penny. Thus, observations revealed that Maria and M were largely detached from the remaining classroom.

If we consider the out-of-class support to M as an academic intervention practice it must be pointed out that Maria tended to focus on general information in each subject and – not details – and to explain through sign language the meaning of some words in the subject material that M did not understand. As strategies to convey the meaning more effectively to M, Maria tried to connect the subject lesson content to daily life in order to increase M's understandings and she saw the teaching method of role play as very effective for M and generally for children with hearing impairment.

Differentiation

Also, both teachers said that sometimes a differentiated form of assessment was used for M. This differentiated assessment was solely prepared by Maria and always took place when M was out of the classroom. Lastly, they both explained that the grading criterion were

differentiated and adapted to M's individual abilities. Lastly, Penny mentioned that she did not use any differentiation regarding the other children with SEN included in the classroom.

Socially-oriented practices

Teamwork activities-grouping

From all perspectives, including M's and observation it was confirmed that teamwork activities, peer interaction and collaboration were not implemented. Both teachers explained that limited lesson time duration, predetermined subject material, and exam-oriented educational system focused on academic skills development negatively contributed to the potential implementation of teamwork activities. Maria also noted how GTs can be uncomfortable with the noise level and looser structure involved in groupwork.

Social-behavioural intervention practices

Both teachers said that they did not need to use social or behavioural intervention practices, because they saw that M did not have any social or behavioural difficulties and was always accepted by her peers.

Co-teachers' collaboration

Both teachers mentioned that they collaborated in fields related to M. Specifically, Penny said that they discussed with each other about how Maria would support M outside the classroom and when M would be included in the classroom. Also, Maria explained that she discussed with Penny about how she would differentiate M's test, about M's progress and M's grading. In contrast, they have never commonly planned the lesson and there was not any feedback regarding the lesson presentation.

Both co-teachers described their collaborative experience as being positive, without any disagreements. However, Maria had negative views about collaborating with the school's director having had several disagreements with her:

"She always used to tell to me what to do...I remember that she asked me to teach M three chapters in one teaching hour in order M to be assessed by her...I explained to her that it is impossible...M had difficulties and would not be adequately prepared to write a test...but nothing changed..." (Maria)

Factors which impede and facilitate co-teaching

Maria mentioned various factors as negatively contributing to co-teaching. At a practical level, she viewed the fact that STs teach in several schools as limiting co-teacher's collaboration across the classes, while she stressed that time for collaboration was limited. She also saw that STs' employment at the middle of the academic year negatively contributes to co-teaching implementation across the classes.

Moreover, Maria saw teachers in general including herself, and especially general teachers as having limited training in co-teaching and in teaching children with SEN and as unaware of the

co-teachers' roles and responsibilities. Moreover, Maria focused on GTs across the classes who are perceived by her as being suspicious about the ST's presence in the classroom and as having a narrow way of thinking without being open-minded and open to new teaching methods or suggestions.

Maria believed that the Greek educational context is not ready or well prepared to implement co-teaching. Firstly, she believed that the Greek ministry tended to adopt teaching models that are implemented in other countries without any adaptation or any educational system preparation and necessary changes. Thus, she believed that co-teaching could not be applied for children with severe SEN, because the Greek educational context is still facing challenges regarding the implementation of inclusion. Moreover, she viewed that schools are exclusively oriented to children's academic skills development avoiding their social skills development, which is perceived by her as negatively contributing to co-teaching.

Thus, Maria suggested alterations in secondary school's curriculum and said that all people involved in education process (i.e. teachers, directors etc) need to change their philosophy with regard to education of children with or without SEN. Also, she viewed collaboration between teachers as mostly facilitating co-teaching and therefore, she suggested official scheduled planning time, in which they would commonly plan the lesson. At a practical level, Maria suggested STs do not change between schools but support one child over longer periods. Furthermore, Maria mentioned teachers' personal characteristics as facilitating co-teaching including the following: willingness to collaborate and to have good relationships with the other co-teacher without arguments, acceptance and asking advice from for the other co-teacher and aiming at children's benefit.

Lastly, both teachers made some suggestions about teachers' training in co-teaching. While both teachers stressed the importance of teachers and especially GTs receiving training in co-teaching (i.e. co-teacher's roles and responsibilities) and in teaching children with SEN, Maria added that the consultants should be better informed about co-teaching in order to better help teachers).

Outcomes of out of in and out of class support.

Both teachers saw that this out-of-class support provided by Maria had a positive academic impact on M. Specifically, Penny mentioned that the fact that Maria knew sign language positively contributed to her better academic support, because she saw that she personally could not help her efficiently. Interestingly, M saw the fact that she had extra academic support in sign language as the most important advantage of co-teaching and expressed positive views about having this kind of extra support in the next academic year.

“...Yes, of course, I would like to have this support at the next academic year...in order to achieve good grades in the final exams...” (M)

Also, M saw academic improvement as a result of receiving extra support from Maria but expressed neutral views about improved friendships. Lastly, M did not view that co-teaching had any negative impact on her.

Additionally, Maria mentioned that the out-of-class support had some positive psychological impacts on M and herself yet a negative social impact on M. Specifically, Maria said that after experiencing the out-of-class support, she realized that she felt more comfortable doing a lesson out of class compared to in class. Maria explained that she could more easily provide explanations in sign language and could do a lesson which was adapted to M's individual rhythms and needs. Maria added that M preferred being withdrawn out of class than being included in the classroom. From M's perspective, although she had positive views about having two teachers in the classroom, she confirmed her preference for being withdrawn out of class. M explained that she felt more comfortable doing a lesson out of the classroom and she understood better the lesson content, because Maria was giving to her detailed explanations in sign language.

Owing to nature of M's support, Maria felt that M was isolated from her peers, but only to a limited extent because M was a girl without social difficulties. More saliently, both teachers mentioned various co-teaching advantages for children with SEN in general. Both teachers viewed co-teaching as a way of helping them academically. At a social level, Maria saw co-teaching as promoting the inclusion of children in mainstream schools and as being very close to the basic principles of the real inclusion. Similarly, Penny saw co-teaching as helping children with SEN feeling part of the school community. Additionally, Maria based on her experience believed that the presence of an ST in the classroom results in increasing the interaction between children with SEN and the remaining children, while she did not see STs sitting next to children with SEN as socially stigmatising them. Lastly, Penny saw that co-teaching results in the psychological support of children with SEN, increasing their self-confidence.

Regarding all children, Penny saw that co-teaching had a neutral impact on them, because Maria did not intervene academically or behaviourally with all children. However, Maria mentioned that co-teaching had mainly social outcomes for all children, e.g. social skills development, acceptance of diversity and enhancement of empathy, interaction with children with SEN. At a behavioural level, Maria saw that co-teaching results in children's better behaviour management. However, she viewed that children may sometimes feel uncomfortable having two teachers in the classroom especially if they are not familiar with this model and saw this as a possible co-teaching disadvantage.

At a personal level, Maria mentioned that she liked working as a co-teacher and she was accustomed to sitting next to an individual child.

Conclusion

This co-teaching pair viewed co-teaching as a teaching model in which an ST and a GT would collaborate with each other in order to support a child with SEN. However, this was not reflected in the practices which teachers used the allocation of their responsibilities and how they perceived each other roles, or the interaction between the GT and M.

Although both teachers saw co-teaching as in-class support expressing their preferences including M in the classroom and despite the fact that the ST saw the child's social skills development as the co-teaching aim, M was mainly being withdrawn out of the classroom. They both explained that this decision was mainly guided by the school director, who preferred M to be taught in a separate classroom. However, it should be noted that the GT raised concerns about whether the in class-support would benefit M as she perceived herself as not qualified in sign language, while the ST expressed positive views towards a combined approach (in and out-class support) except in limited cases of pupils (i.e. pupils with severe type of SEN or inadequate knowledge background). Interestingly, although M had positive views about having two teachers in the classroom, she preferred being withdrawn out of class. M explained that she felt better catered for when doing a lesson out of the classroom and she benefited by further and detailed explanations in sign language.

Moreover, while both teachers saw co-teaching as a collaborative model, they both viewed the ST's role as responsible for an individual student. Thus, the GT's role included responsibilities regarding all children, while the STs' role focused on M (i.e. individual teaching, assessment differentiation). As a result, the STs did not intervene into all children's learning. Several factors that affected negatively the ST role expansion and the adoption of the various co-teaching methods were mentioned; i.e. the Greek educational context is not adequately prepared, secondary school limitations, the GTs' limited training in grouping methods and children not familiar with such methods, inclusion of children with various types and severity of SEN. Also, it seems that the term used in the Greek educational context ("parallel support") limited teachers' perceptions in viewing co-teaching as a method that is focused to individual children. As a consequence, the only co-teaching model both pairs used was the "one teach one assist". Thus, the GT academically intervened with M to a limited degree and thus, no interaction between M and the GT was observed. In contrast, M was exclusively interacted with the ST. Lastly, according to Maria, teamwork-grouping methods were not implemented at all. Maria mentioned several reasons that negatively contributed to the limited use of teamwork activities, such as several secondary school limitations and GTs' unwillingness to use this kind of activities. Also, no social-behavioural interventions practices were used, because both teachers saw that these were not needed.

Both teachers described their collaboration as positive. However, it seems that they did not actually collaborate with each other. This was because they never collaborated with each other about the lesson presentation and about differentiating M's assessment. In contrast, they mainly communicated about what kind of exercises the ST used with M out of the classroom. Maria saw several factors as limiting co-teachers' collaboration across the classes, such as the fact

that STs change between schools and the limited time for communication, teacher's limiting training in co-teaching and unawareness of co-teacher's roles and responsibilities, and GTs' negative attitudes towards STs. Interestingly, the ST saw the Greek education system as ill-prepared to implement co-teaching and inclusion. Thus, she made several suggestions in relation to educational system improvement i.e. alterations in the way of thinking of all people involved in the education process and personal changes, official planning time for collaboration, STs' employment in one school, teachers' training.

Regarding the outcomes of the out-of-class support to M, it has been noted that both and M saw positive academic outcomes. Interestingly, M positively viewed the fact that she received extra academic support in sign language and felt better prepared to face testing as the most important advantage of this type of support. At a social level, while M expressed neutral views about improved friendships, the ST saw that the out of class support isolated M from her peers. In contrast, co-teaching is viewed as having no academic impact regarding all children, while the ST saw co-teaching as having mostly positive social and behavioural impact on them.

4.3 Cross-case analysis

Introduction

This analysis includes the five case studies of co-teaching in relation to five different children with SEN included in five different mainstream classrooms. These children included one girl and one boy with visual impairment, one boy with Autism, one boy with Asperger syndrome and one girl with hearing impairment. Four of the five case studies include two sub-cases of co-teaching pairs in relation to the same student and classroom, while the last case study includes just one pair of classics co-teachers. In each case study the first pair of co-teachers was classics teachers (i.e. one general and one special teacher). The second pair in most of the cases was two maths teachers, while in one case the second pair included a general Maths teacher and a physics teacher. Lastly, in one case the second pair of co-teachers included a French language teacher and a physics teacher (see analytically a map in Appendix 10). Please, note that the below analysis uses pairs of numbers in brackets in order to make more clear and explicit explanations. In each pair of numbers, the first number indicates the number of case study while, the second number indicates the number of sub-case (i.e. 1st-2nd indicates: first case-study-second sub-case)

Teachers' training in co-teaching

Regarding teachers' training, the general teachers did not attend any co-teaching training and none of them had any other co-teaching experience before. However, the general classics teachers seem to be more trained in SEN or in teaching differentiation or in teaching methods based on children's grouping compared to the Maths teachers. This is because two general

classics teachers (see the first sub-cases of the first, second and third case study) attended an in-service seminar in SEN, while two of the above general classics teachers (see the first sub-cases of the first and third case study) attended training in teaching differentiation. Moreover, two general classics teachers (see the first sub-cases of the first and fifth case study) attended training in teaching methods based on children's grouping. Only one general maths teacher (see the second sub-case of the second case study) attended training in SEN. By contrast, the special co-teachers had a Master's degree in SEN and had attended relevant seminars. Also, they had attended in-service training on co-teaching and all except one special maths teachers (see the second sub-case of the fourth case study) had previous co-teaching experience.

Teachers' perceptions of co-teaching and factors which influence their perceptions

Most of the teachers perceived co-teaching in a narrow way. Specifically, they perceived *co-teaching* as one teacher teaching and the other individually assisting one child with SEN. In other words, they viewed co-teaching as an individual or extra support to one child with SEN provided by the STs. Interestingly, three of the general teachers added that they saw co-teaching as an approach in which the STs have a supportive role in the classroom, but the leading role belongs to the GTs. The majority of teachers explained that they saw co-teaching in this narrow way, because it was implemented in this way, mentioning also that the responsibility of teaching, of lesson planning and of all children in a classroom was not a shared one. However, one special teacher viewed co-teaching in a slightly different way. Specifically, she (see first sub-case) saw co-teaching as not only supporting an individual child with SEN but any child with SEN needing help in the classroom.

Teachers also expressed various views in relation to whether this additional support to children with SEN should be implemented in or out of the mainstream class. Although the majority of teachers saw this support as extra help that should be provided in the mainstream classroom, five special teachers out of nine and one general maths teachers (see 1st-2nd, 2nd-2nd, 3rd, 4th) expressed their preference for an approach which could combine in- and out-of-class support. Some teachers explained that this preference was related solely to academic reasons. Especially, one of the above special teachers (3rd-1st) explained that her experience in teaching children with SEN influenced her to consider that these children could be better academically supported out of the main classroom. Moreover, another special teacher (3rd-2nd) saw that this combined approach could enhance child's academic progress. Lastly, the general maths teacher explained that the special teacher often taught the child with SEN something different to the lesson content presentation and thus, she saw that this support could be provided out of class as well.

By contrast, one special teacher (1st-1st) expressed her disagreement with the practice of the out of class support. She stressed that this should be combined with in-class support only in exceptional cases i.e. for a child with severe difficulties or aiming to develop child's skills necessary to her/his life.

Regarding the aim of co-teaching, teachers saw co-teaching as aiming to improve, for children with SEN, either academic attainment or social and behavioural skills development or both. Specifically, the majority of general teachers saw co-teaching as resulting in a child with SEN's academic skills development academic skills development, while four general teachers (1st-1st, 1st-2nd, 2nd-2nd, 5th) out of nine viewed co-teaching as having social aim (i.e. child's inclusion, social skills development, elimination of its isolation and stigmatization). By contrast, special teachers saw the aim of co-teaching in a wider way. Specifically, the majority of special teachers saw co-teaching as having both a social aim (i.e. child's inclusion, independence in their daily life) and an academic aim (i.e. academic improvement). Also, some special teachers (3rd-1st, 3rd-2nd) added to the above co-teaching aims a psychological one (psychological support, sense of security) or a behavioural one (i.e. behavioural skills improvement) (4th-1st). However, only one special teacher saw co-teaching as aiming only to improve the child's academic attainment (2nd-2nd).

The above narrow way of considering co-teaching was reflected in the allocation of co-teachers' roles and responsibilities, the practices that co-teaching pairs used and the interaction between GTs and children with SEN (see below).

Co-teachers' roles from teachers' and students' perspectives

The co-teacher's roles were discrete; the GT's role included responsibilities regarding all children, such as presenting the lesson content, assessing and grading all children's learning, assigning homework, managing all children's behaviour, meeting all pupils' parents. By contrast, the ST's role focused only on individual children with SEN (i.e. sitting next to the individual child, keeping notes during the lesson, recording the child's responses while s/he was doing a test, controlling child's behaviour, differentiating the presentation of the lesson content, assessment differentiation, intervening into child's behavioural-social difficulties, escorting the child during the break, encouraging child's lesson participation, helping him to stay focused).

The above allocation of co-teachers' responsibilities was reflected in teacher's interaction with children with SEN. In most cases, it was observed that the STs interacted with the individual child with SEN. By contrast, in most of the cases, the GTs had limited interaction with children with SEN during the lesson. Especially in one sub-case (4th-2nd) the GT never interacted with the child with SEN. However, in limited cases (2nd-1st, 2nd-2nd, 3rd-4th) observations confirmed that there was an increased interaction between the GT and the child with SEN during the lesson time. Especially in three of the above sub-cases (2nd-1st, 3rd-1st) the GT interacted more with the child with SEN compared to the ST's interaction, which was limited. Regarding the first sub-case, the ST explained that the child with SEN was a very high achieving student and thus, she did not need much support from her. Regarding the other sub-case, no explanation was provided by co-teachers.

The general and special teachers perceived each other's role in a narrow way. Both general and special teachers saw the special teachers' role as solely responsible for an individual child with SEN or as having an assistant role for the child with SEN. Therefore, some general teachers (1st-1st, 1st-2nd, 2nd-1st) saw the ST's role not as an active one; rather, that was limited to providing individual support. Indicatively, one general teacher (2nd-1st) perceived the ST as a "stranger" or as a "child" in "her classroom" because she did not find that the ST had to do many things in the classroom. Also, one special teacher (2nd-2nd) felt that the GT saw her as the child's assistant. Some teachers, specifically one general teacher (1st-2nd) and one special teacher (2nd-1st) explained that the STs assisting one child in the classroom results in GTs perceiving the STs as solely responsible for one child.

However, some teachers saw the special teacher's role in a wider way. Specifically, three general classics teacher (1st-1st, 1st-2nd, 2nd-1st, 3rd-1st) viewed the special teachers as having a consultative role for the GTs about various issues such as how co-teaching could be implemented or how problems related to the individual child could be managed. Especially, one ST (2nd-2nd) saw STs across the classes as positively contributing to GTs professional development, because she perceived STs as having specialized knowledge in teaching children with SEN. Furthermore some teachers saw STs as having a mediating role between child with SEN and GTs. Specifically, one special teacher (2nd-1st), perceived herself as a mediator between the child with SEN and the GT. Also, one general teacher (2nd-2nd) saw the ST as also being her assistant by proving further help to an individual child with SEN. Regarding social or behavioural intervention, some teachers saw STs as having a role. Specifically, two special teachers (1st-1st, 4th-2nd) viewed STs as promoting the inclusion of children with SEN in the classroom. One of them also saw the ST's role as positively affecting the behaviour management of all children, while the other as enhancing all children's awareness of diversity/difference.

Children saw the STs as having a supportive role at an academic and social level. Namely, they saw STs as providing academic support (i.e. providing academic support, enhancing their understandings, helping during the tests). Also, two children (1st, 2nd) saw STs as promoting their socialization (enhancing his communication with other children during the break). In only some sub-cases, (1st-1st, 4th-1st, 4th-2nd), children saw the STs as having a social intervention role (i.e. discussing with them about various issues). By contrast, one child, namely, the boy with visual impairment (1st-2nd) expressed negative views about the special physics teacher for mainly academic-oriented reasons (i.e. not assisting him academically to an extended way, being frequently absent, wishing to withdraw him out of class).

Regarding the GT's role, both general and special teachers saw the general teachers' role as being responsible for all children. Moreover, five special teachers (2nd-2nd, 3rd-1st, 4th-2nd, 5th) out of nine and one general teacher (3rd-2nd) viewed the GTs as having the leading role in the classroom (i.e. taking decisions about the content of the lesson presentation). Especially, in one

case (4th-2nd) the GT saw herself as responsible exclusively for all children except the child with SEN, who is viewed by her as being included exclusively within the ST's responsibilities.

Similarly, the children saw the GTs as the main teacher. This is because the children during the interview process used to name the GTs as "the basic" or "the main" teacher. Also, all children expressed positive views about the GTs. However, some of them (1st, 4th, 5th) stressed that they felt more comfortable asking for help from the STs, while another (2nd) mentioned that they feel comfortable asking help from both of them.

Co-teaching implementation

Limited use of the various models of co-teaching

The only model of co-teaching perceived by all co-teaching pairs as being implemented was the *one teach-one assist*, which was confirmed by observations. This was implemented with the GTs presenting the lesson and circulating among the tables, while the STs mainly provided academic and behavioural support to an individual child with SEN sitting next to her/him.

From the children's perspective, it was confirmed that the dominant co-teaching model implemented by co-teaching pairs was the *one teach-one assist* model. All children described co-teaching as the GT presenting the lesson, while the ST was sitting next to them providing individual support on them.

However, in only one case (see 1st-1st) both teachers and observations confirmed that the model of *station teaching* was used, (i.e. children were grouped into three groups and co-teachers circulated to reinforce guidelines and manage children's behaviour reflecting role exchange to a limited extent.

Limited intervention of the ST with all children and factors affecting the limited ST's role expansion to all children

Despite the fact that most teachers and all children expressed positive views about the idea of STs assisting also other children in the classroom who may face difficulties, most co-teaching pairs reported and observations confirmed that the ST did not intervene with all children or with other children with SEN in the classroom. However, in a few cases (see 1st-1st, 2nd-1st, 2nd-2nd, 3rd-2nd, 4th-1st, 4th-2nd, 5th) the STs mentioned that they occasionally managed the behaviour of all children and intervened academically with some of the children who were sitting next to them, but to a limited extent. However, in only two of the above cases (1st-1st, 5th), this intervention was also confirmed by observations.

As a result, both GTs and STs in all cases mentioned various factors that affected the ST's role being limited to individual children across the classes and therefore, to the limited use of the various co-teaching models. Some STs (1st-1st, 2nd-2nd, 3rd-1st, 4th-1st, 4th-2nd) were focused on the limitations of the system (i.e. the way co-teaching provision is implemented in the Greek educational context limits the ST's role to individual children, the ST's role expansion has not yet been officially determined by the law, the STs change between schools, educational system

not well prepared to implement co-teaching). Also, some GTs ($1^{\text{st}}\text{-}1^{\text{st}}$) and STs ($2^{\text{nd}}\text{-}1^{\text{st}}$, $2^{\text{nd}}\text{-}2^{\text{nd}}$, $3^{\text{rd}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$, 5^{th}) saw the limited collaboration-communication or the limited time for collaboration between themselves and their partners and generally between co-teachers across the classes as contributing negatively to co-teachers' coordination and cooperation. Moreover, some STs saw factors related to the child or children with SEN included in the classroom as further obstacles to the ST's role expansion. Specifically, some STs ($1^{\text{st}}\text{-}1^{\text{st}}$, $1^{\text{st}}\text{-}2^{\text{nd}}$, $2^{\text{nd}}\text{-}2^{\text{nd}}$, $3^{\text{rd}}\text{-}2^{\text{nd}}$, $4^{\text{th}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}1^{\text{st}}$, 5^{th}) and GTs ($2^{\text{nd}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}1^{\text{st}}$) also saw that the type/severity of a child's needs (i.e. severe difficulties) lead to the STs focusing on a specific child or they saw the inclusion of children with varied SEN as a further obstacle to the STs to expand their role to all children. Consistent with the above arguments, one ST ($2^{\text{nd}}\text{-}1^{\text{st}}$) saw the child's very good school performance (i.e. high-achiever student) enabling her to occasionally intervene in other children's learning.

Furthermore, both GTs and STs focused on the GTs' limited training or experience in co-teaching. Specifically, some GTs including themselves, ($1^{\text{st}}\text{-}1^{\text{st}}$, $1^{\text{st}}\text{-}2^{\text{nd}}$, $4^{\text{th}}\text{-}1^{\text{st}}$) and especially some STs ($1^{\text{st}}\text{-}1^{\text{st}}$, $1^{\text{st}}\text{-}2^{\text{nd}}$, $3^{\text{rd}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$) saw the GTs across the classes as unaware of what STs could do in an expanded role. This resulted in GTs viewing the ST's role as focusing on one child. Interestingly, some STs ($2^{\text{nd}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$, 5^{th}) focused on both GTs' and STs' limited training in co-teaching and saw themselves as unaware of what STs could do in an expanded role.

Also, some GTs ($1^{\text{st}}\text{-}1^{\text{st}}$, $2^{\text{nd}}\text{-}2^{\text{nd}}$) and STs ($4^{\text{th}}\text{-}2^{\text{nd}}$, 5^{th}) focused on secondary school limitations i.e. inflexible curriculum, ICT availability, small classes, large number of students in the classroom, limited lesson time duration, subjects' content perceived as demanding). Some teachers attributed the ST's limited role to the teachers' personality/personal characteristics. Specifically, some GTs ($1^{\text{st}}\text{-}1^{\text{st}}$) and especially some STs ($1^{\text{st}}\text{-}1^{\text{st}}$, $1^{\text{st}}\text{-}2^{\text{nd}}$, $2^{\text{nd}}\text{-}2^{\text{nd}}$, $3^{\text{rd}}\text{-}1^{\text{st}}$, $3^{\text{rd}}\text{-}2^{\text{nd}}$) saw the GTs' negative personal characteristics across the classes as limiting the ST's role expansion (i.e. GTs' hesitation to adopt new teaching methods and to give to STs further responsibilities, GTs' negative perceptions about the STs' presence in the classroom). Especially, one GT ($1^{\text{st}}\text{-}2^{\text{nd}}$) saw her partner's negative personal characteristics (i.e. nonchalant attitude) as negatively affecting the ST's role expansion to all children. In addition, some GTs ($2^{\text{nd}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$) and a ST ($2^{\text{nd}}\text{-}2^{\text{nd}}$) saw STs assisting more than one child in the classroom as a noisy process and expressed negative views about this potential scenario.

Finally, the special teachers also related the fact that the ST's role was limited to individual children with the limited use of grouping and teamwork activities. Namely they saw assistance to all children could be provided through a method of grouping. Significantly, one ST in particular, (see $1^{\text{st}}\text{-}1^{\text{st}}$) saw that the GT's positive personality and the fact that she was using grouping methods as actually enabling her to intervene to all children. Nonetheless, teachers mentioned several factors that negatively contributed to the use of grouping and teamwork methods (see above limited use of teamwork methods-factors affected).

Limited grouping/teamwork activities, peer interaction and collaboration and factors affected the limited use of grouping activities

In all cases the co-teaching pairs and observations confirmed that limited grouping/teamwork activities were used. However, in only one case ($1^{\text{st}}\text{-}1^{\text{st}}$) co-teachers reports and observations confirmed that the method of children's grouping was used but to a limited extent.

Almost all teachers saw the use of grouping/teamwork methods as positive, while they mentioned that these could result in the ST's role expansion. However, teachers mentioned several factors that reduced the use of grouping/teamwork methods. Firstly, some GTs ($1^{\text{st}}\text{-}2^{\text{nd}}$, $3^{\text{rd}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$) and STs ($1^{\text{st}}\text{-}1^{\text{st}}$, $3^{\text{rd}}\text{-}1^{\text{st}}$, $3^{\text{rd}}\text{-}2^{\text{nd}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$) saw secondary school limitations, such as inflexible curriculum, limited lesson time duration, predetermined or demanding subject's content, large number of children in the classroom, subject material, the limited availability of ICT facilities, exam-oriented secondary schooling focusing on children's academic skills development as affecting the method of children's grouping and teamwork activities. Consistent with the above argument one ST ($4^{\text{th}}\text{-}2^{\text{nd}}$) saw that the ICT subject actually helped the child with SEN collaborating with his classmates during a teamwork activity.

Moreover, two GTs ($1^{\text{st}}\text{-}2^{\text{nd}}$, $3^{\text{rd}}\text{-}1^{\text{st}}$) and one ST ($3^{\text{rd}}\text{-}2^{\text{nd}}$) saw factors related to the children's participation in the classroom as influencing the use of grouping methods i.e. whether they are quiet or not, the type/severity of children's disabilities that are included in the classroom, the children's age or level of schooling. Moreover, some STs ($1^{\text{st}}\text{-}1^{\text{st}}$, $1^{\text{st}}\text{-}2^{\text{nd}}$, 5^{th}) also saw that children feel more familiar with the traditional way of teaching and classroom arrangements, which negatively contributes to the use of new teaching methods such as grouping/teamwork activities.

Furthermore, both GTs ($1^{\text{st}}\text{-}1^{\text{st}}$) and especially STs ($1^{\text{st}}\text{-}1^{\text{st}}$, $1^{\text{st}}\text{-}2^{\text{nd}}$, $2^{\text{nd}}\text{-}1^{\text{st}}$, $3^{\text{rd}}\text{-}2^{\text{nd}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$) saw GTs across the classes as responsible for the limited use of the grouping method. For example, the GTs were seen by the STs as having limited training in grouping/teamwork activities and as using only the traditional way of teaching. In particular, the STs ($1^{\text{st}}\text{-}2^{\text{nd}}$, $3^{\text{rd}}\text{-}2^{\text{nd}}$, 5^{th}) focused on the GTs negative personal characteristics i.e. GTs being disinterested in training in or in using grouping methods, GTs being unwilling to change their way of teaching. Consistent with the above STs' perceptions, two GTs ($3^{\text{rd}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$) had negative views about the use of grouping/teamwork activities. For example, they saw these methods as a noisy process, or as a method in which only the best students included in a group tended to work on the various activities.

Lastly, one ST ($3^{\text{rd}}\text{-}2^{\text{nd}}$) saw the limited collaboration between co-teachers and fact that STs change between schools as negatively contributing to the use of grouping methods.

In- and out-of-class support

In three sub-cases ($3^{\text{rd}}\text{-}1^{\text{st}}$, $4^{\text{th}}\text{-}1^{\text{st}}$, 5^{th}) the STs regularly withdrew children out of class some teaching hours. Teachers mentioned various reasons why this happened. In two of them ($3^{\text{rd}}\text{-}1^{\text{st}}$,

4th-1st), this decision was exclusively based upon the STs. By contrast in the last case (5th) the ST needed to follow the guidelines of the director of the school, who suggested that she withdraw the child despite the fact that she did not wish to do so.

Regarding the first two cases (3rd-1st, 4th 1st), teachers saw that this approach could have better academic outcomes on children with SEN compared to solely in-class support (i.e. academic improvement and self-confidence and self-awareness enhancement, improvement of their understandings and lesson participation). Especially, one ST (4th-1st) stressed that child's severe academic difficulties could not be adequately addressed in the classroom. Secondly, they expressed their personal preference for combining in- and out-of-class support (i.e. they saw this approach as more beneficial for children with SEN compared to solely in-class support, as limiting the other's children attention or a detraction). Lastly, teachers mentioned that this decision was also consistent with the individual child's preferences.

Teacher-centred way of teaching and further academic strategies

In all cases, a teacher-centred way of teaching was observed during the lesson time; the GTs were presenting the new lesson content while children were listening to them. Further teaching strategies were observed to be followed by the GTs, such as teaching strategic skills, providing explanations, clarifications, using simpler and repetitive questions, examples from daily life, repetitions, and connections to student's experience and previously learned material. Lastly, the GTs were the only ones who wrote on the board.

Moreover, in all cases teachers mentioned that the method of differentiation was used but only in relation to the children with SEN included in the classroom. However, in some cases this method was used to a limited extent and others to a greater extent. Specifically, differentiation was used in various ways such as, differentiated assessment in the form of oral examination, differentiated test questions, differentiated learning objectives in a subject, simplified question wording or further clarifications, grading based on child's capabilities, further explanations or clarification during the lesson presentation, assigning further or easier exercises. However, in only two sub-cases (1st-1st, 4th-2nd) differentiated activities were used or differentiated lesson content was presented to the individual children by the STs (i.e. lesson content different to the GT's lesson presentation).

Some GTs gave various reasons why the method of differentiation was used to a limited extent by themselves. Specifically, one GT (3rd-1st) mentioned several limitations regarding secondary schools (i.e. limited lesson time duration, large number of students, inflexible curriculum, predetermined subjects' content) that affected the limited use of differentiation. Moreover, one GT (4th-1st) explained that due to the fact that the child with SEN had extra support from an ST, she did need to do something extra or different for him. Lastly one GT (4th-2nd) saw that it is difficult for her to adapt the lesson in a way that was beneficial for all students, including the children with SEN who participated in the classroom.

Limited use of social and behavioural skills intervention practices

The STs intervened to a limited extent to children with SEN social and behavioural difficulties. This intervention was implemented in an unsystematic way and mainly during the breaks. Specifically, the STs' intervention was limited in communicating with children with SEN, encouraging them to communicate and to interact with other children during breaks and enhancing their self-confidence, enhancing their empathy, assigning another child to sit next to the child with SEN at the same table. Moreover, the GTs intervened into the social or behavioural difficulties of children with SEN in an indirect way (i.e. by discussing with all children issues relevant to friendships and behavioural issues, by enhancing all children's empathy towards children with SEN).

Teachers mentioned various factors that affected the limited use of intervention practices. Firstly, one, Lucy (3rd-2nd) saw that she could not intervene into the child's social skills development, because she perceived herself as unaware of social skills intervention practices. By contrast, one ST (1st-2nd) stressed that she could not intervene into D's learning in any way due to his serious academic and behavioural difficulties. Moreover, some teachers (2nd-1st, 3rd-1st, 5th) saw that they did not intervene in the child's behavioural or social skills development, because they felt it to be superfluous to requirements. Furthermore, one ST (3rd-1st) saw the fact that she changed between schools as affecting the use of intervention practices. Lastly, one general Maths teacher saw the Maths as a subject which did not give opportunities for discussions aiming at developing social and behavioural skills of children with SEN.

Co-teachers' collaboration and factors which affected their collaboration

Co-teachers expressed varied views in relation to the aspects they actually collaborated on, to their co-teaching experience and the factors which affected their collaboration. It seems that co-teaching pairs did not actually collaborate with each other in an extensive way. This is because in almost all cases the co-teachers never collaborated in terms of issues related to all children (i.e. in commonly planned lesson presentation or feedback discussion about this, grading all children including the child with SEN). To a limited extent, they discussed issues relevant to the child with SEN that was included in the classroom i.e. child's progress, child's grading, child's academic or behavioural intervention, test or teaching differentiation/adaptation to child's needs.

However, in a few cases, co-teachers collaborated more extensively with each other. Specifically, in two cases (see 1st-1st, 3rd-2nd) the co-teaching pair apart from collaborating in issues related to the child with SEN included in the classroom, they communicated about the lesson presentation (i.e. feedback/exchange views) or during the lesson time (1st-1st) (i.e. teachers were observed to use teamwork/children's grouping teaching methods). Also, in some sub-cases (1st-1st, 4th-1st) co-teachers communicated in fields related to all children's assessment issues (i.e. to what extent test questions could be easily answered by all children), to all children's grading and behaviour management.

In most of the cases, co-teachers described their collaboration as positive (1st-1st, 2nd-2nd, 3rd-1st, 3rd-2nd, 4th-1st, 5th). In particular, there was one case (1st-1st), in which the co-teachers expressed

the most positive views about their collaboration. A further analysis of this case indicated various factors that positively contributed to this harmonious collaboration. Firstly, co-teachers had very good communication and interaction and worked closely with each other. Secondly, the co-teachers esteemed each other very much as they mutually expressed warm words and positive feelings. Lastly, the co-teachers expressed common views regarding the aim of co-teaching or the aim behind their practices (i.e. inclusion), the child's potential and each other's roles (i.e. saw the child as a common responsibility). Moreover, in two cases (3rd-1st, 3rd-2nd) the GTs saw the fact that the co-teaching roles were clearly allocated (i.e. they both did not intervene in each other roles, the ST's presence in the classroom was discreet) as positively influencing their collaboration.

However, all the above co-teaching pairs stressed that they did not collaborate extensively or as much as they wanted. As a result, in two sub-cases (2nd-1st, 4th-2nd), teachers expressed neutral views about their collaborative experience, because they viewed that they did not collaborate extensively. Moreover, some of the co-teachers mentioned that sometimes they disagreed with each other about various issues. Teachers mentioned several systemic limitations that affected their limited collaboration, such as the limited time for collaboration and the absence of any official planning time for doing so (see 1st-1st, 3rd-1st, 4th-1st, 5th), the fact that co-teachers' roles and especially the ST's role are not officially determined (2nd-2nd), the limited teaching hours that an ST was allocated to support a child with SEN (2nd-2nd), the fact that STs change a between schools (1st, 2nd-2nd-2nd, 3rd-2nd, 4th-1st, 5th). Also, some teachers mentioned issues related to teachers' training and subject knowledge affected their collaboration, i.e. the co-teachers' different subject specialism or inadequate knowledge background in one subject (1st-2nd, 2nd-2nd) and the limited teacher's training in co-teaching (1st-2nd, 4th-2nd-5th).

By contrast, the collaboration between two co-teaching pairs (1st-2nd, 2nd-1st) seemed not to work well at all. A further analysis of this case indicated various reasons for this. Firstly, co-teachers had limited communication and interaction as they did not even communicate their disagreements and they did not work closely with each other. Especially, one ST (2nd-1st) did not communicate with her partner even on issues relevant to the child with SEN included in the classroom. Secondly, the co-teachers strongly disagreed with each other about various issues, such as the aim of co-teaching the aim behind their practices or the potential of children with SEN. Moreover, it seems that there was not a clear allocation of co-teachers' responsibilities as the GT did not see the child with SEN and various issues emerged in relation to the child as a shared responsibility. Lastly, one ST (2nd-1st) saw the child's strong performance as reducing the relevance of collaboration and three STs (2nd-1st, 2nd-2nd, 5th) saw the GTs' negative personal characteristics (i.e. being headstrong, not changing their mind or being arrogant towards ST) as contributing to their disagreements.

Factors which impede co-teaching implementation

Both co-teachers mentioned various factors as negatively contributing to co-teaching. It should be noted that due to the fact that co-teaching is a collaborative teaching model, the teacher

participants also mentioned various factors that impede co-teachers' collaboration across the classes. The factors were categorized as below:

Special teachers change between many schools-limited collaboration and communication

In all cases, both general and especially special teachers viewed the fact that the STs change between many schools as impeding co-teaching and the learning progress of children with SEN. Moreover, they saw the fact that STs in general change between many schools as a barrier to co-teachers' collaboration across the classes.

Issues related to GTs' limited training and experience in co-teaching and their personal characteristics

Both special and general teachers focused on various issues related to GTs. The most dominant issue stressed by the majority of general and special teachers was the GTs' limited training in co-teaching. Specifically, some GTs and especially the STs (see first case study, first sub-cases of the second and fourth case studies) saw the GTs, including school directors as being poorly informed or as having limited knowledge about the co-teaching method, the co-teacher's roles and what STs could do in an expanded role. Moreover, one ST (2nd-1st) saw the fact that GTs, in general, were inexperienced in co-teaching methods as affecting the collaboration between co-teachers across the classes.

Therefore, the STs referred extensively to the GTs negative personal characteristics. This is because the GTs are perceived by them as unwilling to make changes in their way of teaching and being unreceptive to any consultation and feedback. Specifically, the STs mentioned that the GTs used mainly traditional ways of teaching and are unfamiliar with grouping teaching methods, which are perceived by them as positively contributing to co-teaching. Moreover, one ST (5th) saw the GTs as having a narrow way of thinking without being open-minded or open to new teaching methods or suggestions. Another ST (3rd-1st) stressed that GTs are not used to collaborating or coexisting with another teacher in the same classroom, while two other STs (see 2nd, 3rd-1st, 3rd-2nd, 5th) viewed GTs across the classes as suspicious about their presence in their classroom. Consistent with above arguments, some general teachers (see 3rd-1st, 3rd-2nd) saw the presence of another teacher in the classroom – especially at the beginning – as a challenge, because this made them feel anxious. Furthermore, one ST (4th-1st) saw the GTs as not accepting or acknowledging STs as equal teachers in the classroom. Lastly, one ST (4th-2nd) focused on GTs' attitudes towards STs, explaining that usually GTs who have the same specialism with STs have competitive and sometimes arrogant attitude towards the STs.

ST's limited training

Moreover, two STs (4th-2nd, 5th) focused not only on the GTs but also on the STs' limited training in co-teaching, including also themselves. Both viewed teachers in general as unaware of the actual co-teacher's roles and of the co-teaching aim. Moreover, one of the STs (5th) saw teachers in general as also having limited training in teaching children with SEN. Therefore, one

of the above teachers (4th-2nd) viewed that this limited co-teaching awareness limits the way co-teaching is implementing in Greece.

In-service training limitations

Special teachers saw in-service training as generally insufficient or as having various weaknesses. Specifically, some STs saw that this training usually included inadequate information or not closely associated with the method of co-teaching (i.e. various co-teachers roles and responsibilities) or information already known, i.e. information about the various types of disabilities was provided repeatedly (1st -1st, 1st-2nd, 2nd-1st, 3rd-2nd, 5th). One ST (3rd-2nd) also added that this training did not include information about social intervention practices at all, while another ST (1st-1st) saw that available about co-teaching varied depending on the different districts. In terms of practical approaches, two STs (see 3rd-1st, 4th-1st) viewed that this training was mainly focused on theory without including workshops. Indeed, two STs (1st-1st, 4th-2nd) perceived trainers of this training as not being aware of *co-teaching* and the ST's exclusive entitlement to participate as a strong disadvantage of this training. Lastly, one ST (1st-2nd) saw the fact that teachers who are attending this seminar come from all stages of education (i.e. kindergarten, primary, secondary education) as a disadvantage, because she perceived these stages as being different to each other.

Teachers' personality

Some GTs (1st -1st, 3rd-2nd) viewed the limited communication, collaboration and the perceived co-teacher's egocentricity (i.e. critical/censorious attitude towards the other teachers, feeling that she/he knows everything) negatively contributed to teacher's collaboration across the various classes. However, one GT (1st-2nd) viewed that the ST's personality and the way s/he supports a child can make a positive contribution to co-teaching.

Lack of clarity in allocation of co-teachers' roles and officially scheduled planning time

Some GTs and STs (1st-2nd, 3rd-2nd) saw that educational law did not specify issues such as the ST's role in co-teaching, to what extent and when co-teachers to collaborate with each other. Specifically, they viewed that the co-teachers' roles – and especially the ST's role – are not officially determined, time for collaboration is limited, and no official scheduled planning time exists.

Systemic limitations: co-teaching implementation in the Greek educational context

Some STs and GTs referred to the systemic limitations or to some issues which emerged related to the way co-teaching is implemented in Greece. Firstly, one ST (2nd-1st) and one pair of co-teachers (1st-1st) expressed concerns that co-teaching is not implemented in a right way in Greece. Specifically, they critiqued the way co-teaching is implemented in Greece arguing that the current approach limits the successful implementation of co-teaching in Greek schools and the ST's role to individual children. As a result, the ST considered that STs in general saw co-

teaching in a narrow way and they did not adopt an active role in the various classes. Moreover, one ST (5th) believed that the Greek educational context is unready or ill-prepared to implement co-teaching. Firstly, she believed that the Greek ministry tended to adopt teaching models that are implemented in other countries without any adaptation or any educational system preparation and necessary changes. Thus, she believed that co-teaching could not be applied for children with severe SEN, because the Greek educational context is not ready for implementing inclusion.

Moreover, one ST (1st-1st) attributed this problem to the organization responsible for the diagnosis of children with SEN. She considered that KEDDY fails to identify some children with SEN who require support with the method of co-teaching. As a result, there may be more children in a given class who could benefit from co-teaching, but the ST's role is often confined to an individual child.

Also, a GT (2nd-2nd) saw the way co-teaching is implemented by the Greek ministry as negatively contributing to the learning of children with SEN. She claimed that although children are entitled by the law to be supported by a special teacher in every subject, the Ministry hires only special classics, maths and physics, but no teachers of other specialism i.e. English Language.

Lastly, one ST (4th-2nd) mentioned that special education consultants influence the way co-teaching is implemented in each district. She explained that two years ago when she was working in another district, children's withdrawal out of classroom was not allowed by the consultant, in contrast with the present district where she works.

STs' delayed employment

The special teachers (2nd -1st, 3rd-2nd, 4th-2nd, 5th) saw that the fact that STs are not hired at the beginning of the academic year, as negatively contributing to the successful implementation of co-teaching.

Different knowledge background between co-teachers

One ST (3rd-1st) viewed that the co-teacher's different knowledge background across the classes may cause problems to their collaboration.

Some teachers saw co-teaching not only as a collaborative teaching model but also as teaching model which aims at the inclusion of children with SEN. Therefore, they viewed to various factors such as secondary school limitations, the type of children's SEN and prejudices against children with SEN, as obstacles during to their co-teaching experience.

Secondary school limitations

Both GTs and STs stressed various school-based constraints (i.e. inflexible curriculum, inflexible timetable, pre-determined by the Ministry content for each subject, large number of

students in the classroom) as challenges. Specifically, some teachers ($1^{\text{st}}\text{-}1^{\text{st}}$, $1^{\text{st}}\text{-}2^{\text{nd}}$, $2^{\text{nd}}\text{-}3^{\text{rd}}$) mentioned that the inflexible curriculum limits *differentiation* as a method, which is perceived by them as positively contributing to support children with SEN in a mainstream classroom. One ST ($1^{\text{st}}\text{-}1^{\text{st}}$) stressed that the Greek secondary schools are oriented to exams, setting as priority child's grading. Another GT ($1^{\text{st}}\text{-}1^{\text{st}}$) added that the pre-determined content for each subject, the common exams for all children of the same age in a school, the limited lesson duration, and the large number of students in a classroom acted as obstacles to implementing any individual education plan. Especially, the special teachers ($1^{\text{st}}\text{-}2^{\text{nd}}$, $2^{\text{nd}}\text{-}2^{\text{nd}}$, $2^{\text{nd}}\text{-}2^{\text{nd}}$, $4^{\text{th}}\text{-}2^{\text{nd}}$) saw the inflexible timetable across the classes or the fact that school's directors did not make any alterations to the timetable as an important problem. Lastly, one pair of sciences co-teachers ($2^{\text{nd}}\text{-}2^{\text{nd}}$) mentioned various challenges in relation with teaching children with visual impairments. They both said that the blind children's handbook in Braille language did not include figures and images which negatively contributed to children's learning, especially in the subject of Geometry.

Child's type/severity of SEN

Regarding the obstacles that both teachers faced during their co-teaching experience, some general teachers (1^{st}- , 2^{nd}- , $3^{\text{rd}}\text{-}2^{\text{nd}}$) saw the type/severity of child's SEN or the child's behavioural or academic difficulties as the most significant challenge. Similarly, in one case the GT ($2^{\text{nd}}\text{-}2^{\text{nd}}$) described teaching blind children as the biggest challenge for her, because she saw sciences as including figures, specific terminology and thus, requiring visual skills. Therefore, two co-teaching pairs (2^{nd}) saw various factors related to all children included in the classroom, such as all children's school performance and whether they have adequate knowledge background and all children's age, as influencing the process of co-teaching and its academic outcomes.

School ethos-prejudices against children with SEN

Interestingly, a ST ($1^{\text{st}}\text{-}1^{\text{st}}$) perceived the negative prejudices of GTs towards children with SEN as impeding co-teaching and constraining the efficiency of their support in the mainstream classroom.

Factors which facilitate co-teaching

Co-teacher's training –common training

Both GTs and STs highlighted training in co-teaching as a key driver for change and improvement. Both GTs and STs suggested that GTs should have access to training about co-teaching (i.e. co-teaching implementation/models of co-teaching and the ST's various roles) as well as about grouping methods. Moreover, some STs ($1^{\text{st}}\text{-}1^{\text{st}}$, $2^{\text{nd}}\text{-}1^{\text{s}}$, $2^{\text{nd}}\text{-}2^{\text{nd}}$, 5^{th}) emphasised that not only the GTs but also the STs should try to develop their personal knowledge about co-teaching. Interestingly, a GT ($2^{\text{nd}}\text{-}2^{\text{nd}}$) expressed her need for training which includes also workshops, while another ($2^{\text{nd}}\text{-}2^{\text{nd}}$) saw that GTs should also try to develop their knowledge by contacting specialists in co-teaching.

The recurrent theme of training continued to be seen through two STs who saw that both GTs and STs should expand their knowledge about teaching children with SEN. Specifically, one STs (5th) saw that both GTs and STs should also have access to training about teaching children with SEN, while one ST (1st-1st) said that STs should also be aware of the subject's content and the learning objectives for each case of disability that are officially determined by the Ministry. Lastly, some STs (1st-1st, 2nd-1st, 2nd-2nd, 5th) and one GT (2nd-2nd) believed that both GTs and STs should receive training in themes related to teaching and learning of all children (i.e. child's learning assessment, differentiation and the use of ICT, in teaching theories, having adequate subject knowledge background).

Both STs and GTs (1st-1st, 2nd-2nd, 3rd-1st, 3rd-2nd, 4th-1st, 4th-2nd) made some suggestions about the in-service training in co-teaching. Specifically, they suggested a common training between GTs and STs, which would be implemented by trainers with specialism in co-teaching method and would include information closely associated with the co-teaching method (roles, implementation, co-teaching models) and new ways of teaching (i.e. grouping) as well as workshops. In particular, one ST (3rd-1st) viewed that this training should include teacher's placements in schools and case studies presentations.

Two STs made suggestions about how teachers should be trained as well as the duration of this training. One ST (1st-1st) suggested segregation of trainees according to the stage of education (i.e. primary education teachers and secondary education teachers); while one another (1st-2nd) stressed that there should be secondary teachers' segregation according to their specialism. Regarding the duration of this training, one GT (3rd-1st) and one ST (4th-2nd) suggested longer duration training or training conducted on a regular basis.

Lastly, two STs focused on the special education consultants. Specifically, one ST (3rd-2nd) stressed that consultants in each of the districts should also inform general and special teachers about the basic principles of co-teaching (roles, implementation). Two STs and one GT (2nd-2nd, 5th) mentioned that the special education consultants should be informed about the co-teaching method (i.e. implementation, teacher's roles-responsibilities), as she realized that the consultant in her district was uninformed.

Official determination of co-teaching, of co-teachers' roles and the ST's role

Both GTs and STs (1st-1st, 2nd-2nd, 3rd-1st 4th-2nd) suggested legislative changes in relation to co-teaching implementation and co-teachers' roles, which reflect the need for a more active collaboration between co-teachers. Specifically, teachers stressed that co-teacher's roles and responsibilities should be officially determined and shared, such as the responsibility for teaching and lesson planning. Moreover, one special teacher (1st-1st) raised that the co-teacher's roles should be clearly allocated at the beginning of the academic year.

Interestingly, three special teachers (1st-1st, 2nd-1st, 2nd-2nd) suggested that the term “co-teaching” should be officially and clearly defined, while some of them added that this term should be defined in a way that could expand the ST’s role to all children.

In terms of the ST’s role, some STs and GTs (1st-1st, 2nd-2nd, 2nd-2nd) suggested STs adopting an active role (i.e. expanding their role into all children) and exchanging roles with GTs. Moreover, one GT (1st-1st) viewed that STs should also adopt a consultant role towards GTs.

Officially scheduled planning time

Both GTs and STs (1st-1st, 2nd-2nd, 3rd- 1st 4th-2nd 5th) stressed that there should be an officially scheduled time that could facilitate teachers’ collaboration (i.e. in common plan lesson).

STs working at the same schools – STs’ employment at the beginning of the academic year

Both GTs and especially the STs stressed that STs (1st-1st, 2nd-2nd, 3rd-1st, 3rd-2nd, 4th-1st, 4th-2nd, 5th) should be hired on time and when possible, not be required to work at several different schools. Interestingly, one ST (4th- 2nd) viewed that a ST should be hired in one school and there should be an ST in each school in order to support any children who need help in any classroom.

Collaboration between co-teachers– Teachers’ personality

Both GTs and STs (1st-1st, 1st-2nd, 2nd-2nd 3rd-1st 3rd-2nd, 4th-1st, 4th-2nd, 5th) saw that teacher’s personality and her/his personal characteristics (i.e. willingness to collaborate and to communicate, acceptance of other’s different experience or knowledge background, good relationships with the other co-teacher, acceptance and asking advice from for the other co-teacher, solidarity, acceptance and aiming at children’s improvement) as facilitating co-teaching. Also, some of the above teachers saw communication and collaboration between teachers as the most important factor for successful co-teaching.

Also, some teachers made some suggestions about how special and general teachers could collaborate better with each other. Specifically, one pair of co-teachers (1st-2nd) suggested that teachers in general be receptive to suggestions and to new teaching practices, eliminating prejudices against children with SEN. One GT (2nd-1st) and one ST (1st-1st) also viewed shared aims between teachers and the development of various social skills, (i.e. communication, empathy, trust, willingness to solve disagreements and elimination of selfishness), as facilitating collaboration. Furthermore, some teachers made some specific suggestions about what the GTs and the STs should do in the classroom aiming at their better collaboration. Specifically, one ST (2nd-2nd) saw that GTs across the classes should change their way of teaching and not be suspicious about the presence of STs in the classrooms. Lastly, one ST (3rd-1st) suggested that STs across the classes should always try to make their presence in the classroom as discreet as they can, aiming to minimise any disturbance to the rest of the class.

Regarding co-teacher's communication and whether the GTs or the STs should start this communication the views were varied. Specifically, a ST (2nd-1st) stressed that the GTs should always try to make the first step for communication, because she perceived STs as visitors and GTs as hosts across the classrooms. By contrast one GT (2nd-2nd) believed that both teachers were equally responsible for taking the first step in establishing a positive rapport and foundation for positive communication.

Amendments about the co-teaching implementation and secondary education stage

Teachers made various suggestions in relation to the way co-teaching should be implemented, the ST's employment and the diagnosis of children with SEN by KEDDY. One pair of co-teachers (1st-1st) suggested alterations in co-teaching implementation in the way that the ST's role would be expanded to all children. Moreover, one ST (4th-1st) saw that secondary special education was neglected by the government compared to primary education and she expected in the future the secondary education to be on the focus of government's attention. Furthermore, One GT (2nd-2nd) saw STs of every subject specialism should be hired by the Ministry to undertake the role of a co-teacher aiming to support children with SEN in every subject. Lastly, one GT (1st-1st) suggested that all children with SEN should receive an official diagnosis from KEDDY which would give to them the right to access a special teacher located in their classroom, should this need arise.

Secondary school alterations

Some GTs and STs (1st-1st, 2nd-2nd, 4th-2nd, 5th) viewed that schools are exclusively oriented to children's academic skills development (i.e. paying attention mostly to children's assessment and grading) avoiding their social skills development, which is perceived by them as negatively contributing to co-teaching. Thus, they suggested that schools should also aim at inclusion and social skills development. Specifically, two ST (2nd-2nd, 3rd-2nd) stressed that teachers should use various teaching approaches/methods that enhance all children's social skills development, such as teamwork and grouping as well as the learning support of children with SEN.

Lastly, some general and special teachers (1st-1st, 1st-2nd, 2nd- 2nd, 5th) saw various secondary school alterations such as curriculum differentiation/flexible curriculum, flexible timetable, alterations in handbooks/student's material and ICT availability, extension of lesson time duration, as facilitating co-teaching.

Outcomes of co-teaching to children with SEN, to all children in the classroom and to teachers' themselves

Outcomes to children with SEN

Teachers (1st-1st, 1st-2nd, 3rd-1st, 3rd-2nd, 4th-1st, 4th-2nd) saw that co-teaching resulted in various positive academic and learning outcomes to children with SEN, such as the academic progress of children with SEN, improved performance in tests, increased lesson participation and concentration, better lesson understandings and development of subject knowledge. However,

two pair of co-teachers (2nd) did not see any academic improvement regarding the girl with a visual impairment as a result of co-teaching, because, they saw this girl as already a very high-achieving student.

Similarly, all children saw that co-teaching had various academic benefits on them (i.e. receiving extra help, extra academic support in sign language, learning new ways to study or to do exercises, grade improvement and academic progress, an increased subject's knowledge, better-prepared homework, concentration enhancement, better lesson understandings). However, the high-achieving girl with visual impairment stressed that co-teaching had neutral academic outcomes on her (i.e. no subject knowledge development, not learning new ways to do her exercises, no grade improvement).

At a social level, teachers (1st-1st, 2nd-1st, 4th-1st, 4th-2nd) mentioned various positive outcomes for children with SEN, such as social skills development, improvement of their relationships with peers, increased interaction and collaboration with their peers during lessons and break time, communication with ST. However, in some cases (2nd-1st, 3rd-1st) in which children with SEN did not have social difficulties, the teachers saw that co-teaching did not have any impact on them socially. Furthermore, while some teachers (1st-1st) expressed neutral views regarding improved friendships, some others (2nd-2nd) saw positive outcomes.

From the students' perspective, some children (1st, 3rd) saw various social benefits of co-teaching (i.e. enhancement of collaboration-interaction with their peers). By contrast, two children (2nd, 4th) saw that co-teaching had a negative social impact on them, because they saw that co-teaching resulted in limiting their interaction with peers during lesson or break time (i.e. the fact that STs escorted them during the break and sitting next to them during lesson time made the other children more hesitant to interact with them). Similarly, two children (4th, 5th) saw that co-teaching did not result in increasing his interaction-collaboration with his peers. Lastly, all children saw neutral outcomes of co-teaching on them regarding improved friendships.

At a behavioural level, teachers (1st-1st, 1st-2nd, 3rd-2nd, 3rd-1st, 4th-1st, 4th-2nd) mentioned positive outcomes on children with SEN, such as behavioural improvement or better behaviour management. However, in cases in which children did not face behavioural difficulties (see 2nd-1st, 2nd-2nd) some teachers saw co-teaching as not affecting the child's behaviour.

Similarly, some children (1st, 4th) who faced behavioural difficulties saw various benefits on their behaviour (i.e. behaviour improvement). However, the girl with visual impairment (2nd) and the boy with Autism, who did not face any behavioural difficulties, did not see that co-teaching had any behavioural impact on them.

Moreover, teachers (1st-1st, 2nd-1st, 3rd-1st, 4th-1st) mentioned that co-teaching had some positive outcomes to children with SEN's psychologically and in terms of self and attitude – such as feeling more self-confidence, happy coming in school and generation of positive attitudes

towards co-teacher. However, in cases in which children did not face these particular difficulties (2nd-2nd) the teachers saw co-teaching as not affecting the child's self-confidence.

From the children's perspective, two children (1st, 4th) saw that co-teaching had a positive psychological impact on them, because they could communicate with the special teachers during the break about various issues.

Advantages and disadvantages of co-teaching approach to children with SEN across the classes

Interestingly, the majority of teachers (see all cases except the sub-case: 3rd-2nd) saw that the co-teaching approach embedded approaches which gave rise to social and self-oriented advantages for children with SEN in general (i.e. promotion of their inclusion and the feeling of being part of a school community, elimination of their isolation and enhancement of their social skills development, enhancement of their self-confidence, self-awareness, self-secure, courage, interaction and communication with their general teachers and classmates). From children's perspective, only the boy with visual impairment (1st) saw the fact that co-teaching enabled him to be included in the classroom as the major advantage of co-teaching.

Consistent with the above argument, some teachers (1st-1st, 4th-1st, 4th-2nd) believed that co-teaching is mainly necessary for children with Autism and behavioural difficulties. By contrast, the children with Autism (3rd) and Asperger (4th) syndrome saw the classroom environment as noisy place which affected their concentration and described this as a co-teaching disadvantage. Moreover, an ST and a GT (1st-2nd, 4th-2nd) saw co-teaching as effective solely for children who are able to attend a mainstream school, while another GT (4th-1st) saw co-teaching as effective for middle-achiever students. This probably indicates that the co-teaching implementation requires improvement in order to benefit all children academically. In addition, some other teachers (1st-1st, 4th-2nd) saw that co-teaching is also helpful for children with sensory needs (i.e. visual or hearing impairment).

At an academic level, some teachers (1st-1st, 2nd-2nd, 3rd-1st, 4th-1st, 4th-2nd, 5th) saw the co-teaching approach as having also various academic advantages for the children with SEN across the classes (i.e. enhancement of their lesson participation, individualised and adapted to their needs support, academic progress). Moreover, two STs (3rd-2nd, 4th-1st, 5th) viewed co-teaching across the classes as enhancing the psychological support of children with SEN.

From the children's perspective, four of the five children (2nd, 3rd, 4th, and 5th) saw the fact that they got extra academic support as an important advantage of co-teaching for them. In terms of the child with Autism (3rd), he saw the psychological support that he received from the ST as the most significant advantage of co-teaching, expressing very positive feelings (i.e. feelings of freedom and happiness) about this teaching model.

By contrast, some teachers saw the way in which co-teaching is implemented across the classes as having some negative impact on children with SEN. Specifically, one ST (2nd-2nd) saw that STs whispering into children's ear may confuse them, because they hear two voices simultaneously. Interestingly, the children with visual impairment (2nd) and the child with Autism (3rd) confirmed the fact that they became confused by two teachers speaking simultaneously and highlighted this themselves as a disadvantage of co-teaching, without prompting.

With regards to break times, one ST (3rd-2nd) saw the fact that STs across the classes used to escort children with SEN during the breaks as limiting their interaction with their classmates. Therefore, one ST (1st-2nd), stressed that co-teaching may result in children with SEN being dependent on a ST. Similarly, the girl with visual impairment (2nd) viewed the fact that the STs sitting next to her resulted in limiting her interaction and collaboration with her classmates during lesson time and breaks. She also expressed concerns that excessive explanation by the STs on learning points already familiar to her was a further disadvantage of co-teaching. Thus, she expressed her preference towards interacting with her classmates during the break and felt that interaction with STs should be limited to what was strictly necessary.

Moreover, teachers were expressed different views in relation to whether STs sitting next to children with SEN results in children's social stigmatization. Specifically, while some teachers (1st-2nd, 2nd-1st, 3rd-2nd, 4th-1st) stressed that this may result in children's social stigmatization, while other teachers (3rd-1st, 4th-2nd, 5th) expressed the opposite view.

Similarly, children expressed various views in relation to STs sitting next to them on the same table. Specifically, while the pupil with a visual impairment (1st) expressed neutral views about STs sitting next to him, he unequivocally expressed his preference for sitting with another child at the table rather than with the ST. By contrast some children (3rd, 4th, 5th) preferred sitting with the ST as they saw that this would result in their academic skills development.

Regarding the possible disadvantages to all children, one ST (4th-1st) saw that specific children receiving individual attention by a second teacher may result in the remaining children feeling jealousy towards them.

Advantages and disadvantages: combined approach of in- and out-of-class support to children with SEN

In the sub-cases (3rd-1st, 4th-1st, 5th) in which children with SEN were supported by the combined approach of in- and out-of-class support, teachers mentioned the various underlying advantages and disadvantages. Specifically, all teachers saw that this approach resulted in academic progress for children with SEN, having various positive academic outcomes (i.e. better lesson content understandings, increased lesson participation). Especially, the ST who supported the girl with hearing impairment saw that this approach resulted in effective academic support.

Children also expressed their preferences in relation to this combined approach. The majority of children namely, the boys with Autism (3rd) and Asperger syndrome (4th) and the girl with hearing impairment (5th) who experienced the out-of-class support, expressed their preference for being withdrawn out of class. By contrast, two children and specifically the children with visual impairment (1st, 2nd) expressed their preference for being included in the mainstream classroom. Children mentioned various reasons for this preference. Firstly, some children (3rd, 5th) believed that the out-of-class support benefited them more academically compared to the in-class support (i.e. increased their understandings, got detailed and further explanations, differentiation and further exercises, helped their individual study skills to effectively work on their own in the classroom). Furthermore, the children with Autism and Asperger syndrome gave an explanation which was more related to their difficulties than to co-teaching itself. This is because they saw the classroom environment as a noisy place in which they could not concentrate.

However, teachers mentioned that the out-of-class support has several disadvantages for children with SEN. Specifically, some teachers (3rd-1st) mentioned that the out-of-class support negatively influenced the child's lesson participation and concentration in the classroom (i.e. the child already knew the lesson content, limited learning motivation) and learning motivation to work at home. Interestingly, the child with Autism also saw that that the out-of-class sessions came with significant disadvantages, as he saw that his learning motivation decreased when he was reintroduced into the classroom. At a social level, teachers (3rd-1st, 5th) mentioned that child's withdrawal out of class resulted in their social isolation from their classmates.

Lastly, one ST (5th) saw that the out-of-class support had a positive psychological impact on her (i.e. felt more comfortable doing a lesson out of class compared to in class, as a result of being better able to make explanations in sign language and adapt the lesson to the child's individual needs).

Outcomes for all children

Regarding all children, some teachers (1st-1st, 2nd-1st, 3rd-1st, 5th) saw that co-teaching had mostly social outcomes for all children, e.g. social skills development, acceptance of diversity enhancement of empathy, improvement of self-awareness through interaction and collaboration with children with SEN, development of empathy towards children with SEN.

By contrast, all teachers in all cases saw that co-teaching had limited academic academic outcomes in terms of the whole class. This is because they believed that STs focusing mainly on individual children with SEN, resulted in co-teaching not having much academic effect on those children not receiving support from an ST. Especially, in one sub-case (2nd-2nd) the girl with visual impairment saw that the way in which the ST intervened academically with some children did not benefit them (i.e. giving answers without any feedback). By contrast, one ST (3rd-1st) felt that her presence in the classroom increased children's concentration, lesson participation, and learning motivation.

Moreover, teachers (1st-1st, 1st-2nd, 3rd-2nd, 5th) mentioned various positive behavioural outcomes for all children, such as children's better behavioural management.

However, some STs saw that the ST's presence in the classroom had a negative impact on all children in the class. Specifically one ST (1st-1st) saw that by controlling all children's behaviour resulted in some of them viewing her as a "second pair of eyes", which generated some unease. Moreover, three GTs (1st-2nd, 2nd-1st, 4th-2nd) and one ST (2nd-2nd) saw that the ST's presence distracted children's attention in the classroom. Lastly, two STs (2nd-2nd, 5th) also saw that their presence in the classroom made some children feel nervous or uncomfortable, because they perceived her as "second judge" in the classroom who assessed their answers.

Personal outcomes on teachers

Some GTs and especially some STs (1st-1st, 2nd-1st, 4th-1st) saw that co-teaching had various positive personal outcomes, such as improvement of their professional knowledge e.g. knowledge about teaching children with SEN and all children, knowledge about the use of ICT and teamwork activities. By contrast, one GT (1st-1st) saw that the ST's focus on the child with visual impairment resulted in limiting her interest towards developing her knowledge regarding this disability.

Interestingly, one pair of co-teachers (2nd-2nd) stressed that their professional knowledge had not developed from using co-teaching but from teaching in a classroom where a child with SEN was included (i.e. learned new ways to differentiate and adapt her teaching to a child's needs). On the other hand, some STs and especially some of the GTs (1st-2nd, 2nd-1st, 3rd-1st, 4th-1st, 4th-2nd) viewed co-teaching as having neutral outcomes on themselves (i.e. neutral impact on professional development).

Moreover, teachers saw that co-teaching had a positive as well as negative impact on their psychological wellbeing. Specifically, one GT (1st-1st) mentioned that she felt relieved as a result of sharing responsibilities regarding children with SEN and all children's behaviour management. Moreover, one ST (2nd-2nd) mentioned that her co-teaching experience resulted in feeling good about herself, because she positively contributed to the learning of children's with SEN. By contrast, two STs (1st-1st, 2nd-1st) viewed that sitting next to one child or by focusing mainly on the individual child with SEN resulted in children seeing them as responsible exclusively for one child which resulted in them feeling they had a less active role in the classroom (i.e. felt like an "observer").

Children's preferences

Lastly, children expressed their views in relation to whether they preferred co-teaching for the next academic year. The children with a visual impairment (1st, 2nd) mentioned that they did not prefer having two teachers for the next year. While the girl explained that she did not need this arrangement, the boy did not give any explanation. By contrast, the remaining children

expressed their preference for being supported by the co-teaching method for the next academic year.

Conclusion

The student interview and mainly the observational data were not strongly represented within the presented analysis in comparison to teacher interview data. This imbalance could be attributed to various reasons. With regards to the observation data it should be explained that co-teachers' actions followed predictable patterns within the same co-teaching classroom observed. Namely, there were not considerable changes between co-teachers' practices among the various observations in relation to the same co-teaching pair. Thus, the observation data were quite repetitive. As a result, this limitation is reflected upon the analysis of the observation data. Another limitation may be that although the pupils were very talkative during the interview process, they were also very spontaneous. Therefore, sometimes the pupils gave information that was not so closely associated with the main focus of the question or the study. As a result, some data could not be used to the present study due to their irrelevance and lack of contribution to the inferences made in the present study. However, assurances could be given that all the data were used to maximum benefit in order to provide valuable and valid information and conclusions for the present study.

5. Discussion

5.1 Introduction

The survey and cross-case analysis revealed some basic themes in relation to teachers' and students' perceptions of the co-teaching approach implemented in secondary mainstream classrooms. The sections below integrate the findings from the survey and case studies. Specifically, the section *Co-teaching implementation* was based on teachers' survey and interview responses as well as on observation findings. The section *Teachers' perceptions of co-teaching* was based on both teachers' survey and interview responses. Furthermore, the section *Outcomes of co-teaching* was based on both teachers' and children's perspective. Lastly, the section *on perceptions of children with SEN on co-teaching* was based on children's interview responses. These themes are presented and illustrated below.

5.2 Co-teaching implementation in secondary mainstream classrooms

Limited use of the various models of co-teaching

Despite the existence of six different models of co-teaching that enable role exchange between co-teachers (Immelou, 2010; Sileo and Garderen, 2010; Weiss & Lloyd, 2002, Dieker, 2001), the present study revealed that these various models were used to a limited extent by the co-teacher participants. However, the co-teaching model of *one teach-one assist* was the most

commonly used model of co-teaching. While survey results showed that the second most commonly used co-teaching model was the “One teach one observes” followed by the model of “Alternative teaching”, these models were not observed or were not mentioned by the co-teachers as being implemented. Moreover, although survey participants saw the model of *station-teaching* as the third least used co-teaching model, in one sub-case (see 1st-1st) the model of *station-teaching* was observed and was also confirmed by both co-teachers as being used, albeit to a limited extent.

There are several studies in the Greek co-teaching literature which also show that the *one teach-one assist* was the dominant co-teaching model used by co-teachers (Stefanidis & Strogilos, 2015; Strogilos & Tragoulia, 2013). Similarly, a considerable amount of observational and qualitative research concluded that the most dominant co-teaching model used by teachers in the USA schools was also the one teach one assist (McDuffie, et al 2005; Welch, 2000). This is also in line with Scruggs et al. (2007) conducted a *metasynthesis* of 32 qualitative studies and found that the most common co-teaching model used was “*one teach, one assist*”. As Thousand et al. (2006) explained there is not any one co-teaching model that is better than the others, but teachers should express a preference towards adopting one of them based on the criterion of meeting pupils’ individual needs. However, as it is stressed in the co-teaching literature (Friend et al., 2010; Harbort et al., 2007; Masropieri et al., 2005) it is the variety of teaching approaches that can be applied by teachers within the co-teaching approach that makes this method as a very promising inclusion model.

ST's limited role expansion to all children-Factors affected the limited ST's role expansion

The narrow way of considering co-teaching was related to the allocation of co-teachers' roles. Survey participants and both co-teacher and pupil interviewees agreed that the ST's role focused only on individual children with SEN. Both GTs and STs saw the STs as solely responsible for an individual child with SEN or as having an assistant role for the child with SEN. However, it seems that a few GTs and mainly the STs saw the ST's role in a wider way, but also in relation to individual children with SEN. For example, they saw the STs as having a consultant role for the GTs, a mediating role between the GTs and the child with SEN and a social or behavioural intervention role for children with SEN. Similarly, observations in the secondary classrooms revealed that the special teachers interacted and intervened with all children to a limited extent and in a non-systematic way. As a result, some general teachers saw the ST's role as limited to providing individual support to a child with SEN.

The limited ST's role to individual children with SEN or the auxiliary role of the special teacher within the co-teaching approach has been also stressed in a number of research studies at a national and international level. For instance, it mirrors the study of Murawski (2006), who observed teachers in co-taught classrooms found that special education teachers' main role was to provide help to the general education teacher by circulating among students. The study also corroborates the findings of Magiera and Zigmond (2005), who observed children with

SEN's actions within co-taught and non co-taught classrooms found that special education teachers interacted more with children with SEN in co-taught classes than the general teachers. Although my study focused on secondary education, the findings are also in accord with Arnidou (2007) and Strogilos and Tragoulia (2013) who investigated primary education special teachers' perceptions in terms of co-teaching and their roles within this approach. They found that teachers saw themselves as having a complementary or supportive role mainly in relation to children with SEN included within a classroom, while the dominant instruction role was undertaken by the general education teacher.

By contrast, survey participants and both co-teachers and children in all case studies agreed that the GT's role included responsibilities oriented to all children. Moreover, survey data, showed that both GTs and STs saw some of the responsibilities for children with SEN as being a common one, such as the responsibilities of *meeting children's with SEN parents*, of *monitoring children's with SEN progress*, of *knowing their strengths and weaknesses*, of *assigning work to students with SEN*, of *grading children with SEN*. Interestingly, in only one case (4th-2nd) the GT saw herself as responsible exclusively for all children except the child with SEN, who was viewed by her as being as the sole responsibility of the ST.

The expanded role of GTs in the co-teaching approach has also been stressed in the international literature. Indicatively, Harbort et al. (2007) observing teachers' instructional actions within co-teaching classrooms found that general education teachers presented content and managed pupils' behaviour more often than special education teachers. The above findings indicated an unequal allocation of responsibilities between the GTs and the STs; with the GTs having more responsibilities than the STs. This was also confirmed by survey results. While the GT respondents reported that *they did more than their partner*, the STs believed the opposite (see 4.1.8). These increased responsibilities of the GTs resulted in some teachers viewing GTs as having the leading role and children considering them as "the basic" or "the main" teacher.

Probably, the above findings could be attributed to the difference in status between the general and special teachers in relation to their employment background and conditions of service (see analytically in 2.5.2). Therefore, the distinct unevenly distributed roles that the co-teachers have were inconsistent with the basic principles of the co-teaching philosophy and may militate against the co-teaching approach. As Thousand, et al., (2006, p. 242), explain *co-teaching* "implies both the general and special teacher are teaching at the same time, the same lesson and are involved equally in teaching process of few or all the children within classroom". Thus, the different role designation may influence teachers and children to view the special teacher as solely responsible for "special" children, resulting in undermining the co-teaching method.

However, based on the survey results, the GTs and STs expressed different views regarding various practices that are related to the share of classroom responsibilities or to the special teacher's role expansion to all children (see chapter 4.1.7). Specifically, the GTs were more negative about the sharing of various classroom responsibilities compared to the STs. While the

STs believed that co-teachers should share the classroom management, the GTs expressed, at best, only slightly positive views about this. Similarly, while the STs expressed slightly positive views about the sharing of classroom instruction by both co-teachers, the GTs were slightly negative regarding the sharing of classroom instruction. Moreover, while the STs expressed slightly positive views about the ST's role expansion to all students, the GTs expressed slightly negative views about this.

It therefore seems that teachers did not share the same opinion about the responsibilities that co-teachers should have in the co-teaching method. The above findings were consistent with Stefanidis and Strogiros's (2015) research conducted in Greek co-teaching classrooms. Specifically, they found that the special teachers were more in favour of their own participation in responsibilities related to all children than the general teachers. Also, special teachers were more positive about general teachers' participation in responsibilities related to children with SEN. Teachers' different perceptions about their co-teaching responsibilities may have a negative impact on co-teaching, because as Stefanidis and Strogiros (2015, p. 13) stressed the "different attitudes of co-teachers towards their responsibilities...could hinder the development of a shared approach in...inclusive classrooms". Moreover, it seems that the ST participants of this research were closer to the philosophy of co-teaching than the GTs. This is because co-teaching advocates the equal allocation of co-teachers' responsibilities aiming at promoting the inclusion of children with SEN. However, it should be taken into account that the majority of GT and ST interviewees were positive about the idea of STs assisting all children in the classroom. As a result, it seems that interviewees did not agree with the Ministry of Education's persistence in retaining independent roles between co-teachers. Hence, the GTs' negative attitudes towards the ST's role expansion could be attributed to the concerns about potential difficulties or challenges in relation to the feasibility of this endeavour. Some of the basic concerns that teacher interviewees raised are illustrated in detail below.

Cross-case analysis revealed that various factors affected the limited ST's role expansion and thus, the limited use of co-teaching models. Firstly, teachers saw that the Ministry of Education's guidelines with regards to the co-teaching implementation limits the ST's role to children with SEN and imposes distinct roles between co-teachers. Secondly, especially the STs mentioned several issues related to GTs, such as the GTs' limited training or experience in co-teaching, and the GTs' unwillingness to share the classroom responsibilities. Also the STs saw that the GTs' negative attitudes towards the STs affects co-teaching implementation (i.e. GTs' unwillingness to give to STs further responsibilities, GTs' negative perceptions about the STs' presence in the classroom, GTs' unwillingness to change their (traditional) way of teaching or to adopt new teaching methods, the GTs' high academic expectations for all children focusing mainly on children's academic skills development).

It seems that the model of "one teach-one assist" that was promoted by the co-teaching policy guidelines influenced co-teachers to consider that the GTs have responsibility for the whole classroom while the STs are solely responsible for children with SEN. Inevitably, it seems that

the GTs feel that they have the dominant role in classroom management. The above finding was not a unique one in the co-teaching literature, as several studies revealed the general teachers' refusal to share the classroom responsibilities (see the *metasynthesis* of Scruggs et al., 2007). Co-teaching research evidence stressed the importance of teachers' training in co-teaching to the ST's role expansion to all children and to the enhancement of the "role-exchange" between teachers. Indeed, it can be argued that lack of training is linked to the inability to conceive of or implement role exchange within the Greek context. Indicatively, the benefit of training has been highlighted by Budah et al. (1997), who conducted experimental research that gathered data on sixteen pairs of co-teachers using the method of teachers' training as an intervention process. Before the training intervention process they observed that one teacher usually takes the leading role of instruction, while the other (usually the special teacher) takes a more inactive role standing next to children. Thus, there was limited role exchange and interaction between co-teachers. However, after the intervention, it was observed that both of teachers took a more active role as they interchanged their instructional roles and they spent more time appropriately intervening in pupil's learning. Last, but not least, research evidence showed that the limited experience in co-teaching negatively affected teachers' perceptions of sharing the classroom management. Indicatively, Stefanidis and Strogilos (2015) found that more experienced teachers expressed more positive views towards sharing the classroom responsibilities. This emphasises the need for experience as well as training in co-teaching.

Specific to the context of this study, although no doubt also having relevance to other contexts worldwide, teachers mentioned various overarching systemic limitations that affect the limited use of co-teaching models i.e., the ST's role expansion has not yet been officially determined by the law, the STs change between schools, educational system not well prepared to implement co-teaching. Fourthly, teachers mentioned several secondary school limitations (i.e. inflexible curriculum, ICT unavailability, small classes, large number of students in the classroom, limited lesson time duration, subjects' content perceived as demanding). Additionally, teachers saw that the limited collaboration and communication or the limited time for collaboration between co-teachers negatively impinged upon progress in co-teaching.

Finally, the special teachers of the present study related the limited use of co-teaching models and ST's limited role to individual children with the difficulty of implementing teaching methods based on grouping and teamwork activities. In other words, teachers saw that these methods could result in the ST's role expansion. One particularly significant finding of the study relates to the ST reports and observations in a sub-case (see 1st-1st) confirmed that the method of grouping actually enabled the STs to intervene with all children. Therefore, teachers saw that the GTs' limited training or experience of grouping/teamwork methods and several factors oriented to children (i.e. the type/severity of children's disabilities, all children's age or grade) as affecting the limited use of grouping methods. According to the critical reflection on co-teaching approach that was described in a previous chapter (see analytically in the chapter "*Critical reflection on co-teaching approach*" on p.22) the philosophy of co-teaching is underpinned by

the use of pupil's' grouping and team working activities. Thus, the way co-teaching was implemented in secondary mainstream schools seemed to be, in most cases, far removed from the ideal teaching method at the heart of co-teaching.

Extended use of the combined approach of in and out of class support

Based on the literature (Friend et al., 2010), co-teaching is an inclusive teaching approach or aims to include children with SEN into the mainstream classroom. Therefore, co-teaching reflects a movement of the Greek policymakers to promote more inclusive practices within mainstream classrooms. However, the Greek secondary co-teacher participants tended to use the combined approach in and out of class support. This was confirmed by both survey data and cross case analysis. Specifically, most of the survey participants (78%) reported that they used this combined approach (see *Teachers' roles and responsibilities* section). Similarly, in three sub-cases (3rd-1st, 4th-1st, 5th) the STs used to withdraw children out of class some teaching hours.

Interestingly, the survey data and the cross-cases analysis indicated that it is the STs who preferred this combined approach and not the GTs. Specifically, in two sub-cases (3rd-1st, 4th-1st) out of the total number of three sub-cases, the decision about the child's' withdrawal was exclusively made by STs. Only in one case (5th) was the decision based upon the school's director, who was also co-teaching with the ST. The above finding was also confirmed by the survey respondents as most of the GTs and STs (in total 56% of the respondents) reported that withdrawal of children with SEN out of classroom was included in the ST's responsibilities. Moreover, while the STs survey respondents expressed slightly positive views about the above practice, the GTs expressed slightly negative views about this (see *Teacher's perceptions towards recommended collaborative practices*). Lastly, six special teachers out of nine and one general maths teacher expressed their personal preference for combining the in and out of class support, despite the fact that the majority of them did not use this method.

The above findings were consistent with the international literature on the subject of inclusion. Specifically, at international level, as Avramidis and Norwich (2002) stressed in their review of the literature, teachers are mainly positive about the underlying philosophy of inclusion; However, Avramidis & Norwich (2002) went on to emphasise that there are no studies showing that teachers are in favour of full inclusion (see also Avramidis & Kalyva, 2007). Several studies investigating teachers' perceptions about inclusion (e.g. see Idol, 2006) indicated that teachers have doubts regarding the practicalities of inclusion indicating that teachers are sceptical about the practical implementation of inclusion. Mirroring this international literature,, researchers about Greek secondary teachers' perceptions of inclusion (Xanthopoulou, 2011; Koutrouba et al., 2006) showed that teachers held positive attitudes, but they expressed concerns regarding practical issues and the practical implementation of inclusion in Greece.

Teachers' concerns about the practicalities of inclusion were also reflected in some co-teachers' choice of in- and out-of-class support approach instead of a solely inclusion of children with

SEN in the mainstream classroom. Consistent with the present study, Arnidou (2007), in her Masters' dissertation research found that although primary education special teachers had generally positive perceptions of inclusion, they expressed doubts with regard to effective inclusion of disabled children within mainstream schools, suggesting as a solution for them the partial withdrawal to separate rooms or their participation in integration classes.

Cross-case analysis contributed to understanding the various difficulties or reasons why some co-teachers used this combined approach to support children with SEN. Firstly, some STs stated that the combined approach could more effectively enhance children with SEN's academic skills development than solely in class-support. This is because the special teachers of two sub-cases (3rd-1st, 4th-1st), saw that the combined approach of in and out of class support could have better academic outcomes for children with SEN compared to solely in-class support (e.g. academic progress, better lesson content understandings, increased lesson participation). Moreover, some STs related this approach with child's type/severity of SEN, as they saw that children with severe difficulties could be better supported out of the main classroom or could more effectively develop skills necessary to their life.

Moreover, some STs expressed their personal preference to withdraw children with SEN out of class, as they saw that they could better provide efficient academic support to them and also ensure that all children in the classroom were better able to concentrate. This is because some STs saw the out-of-class support as a better way of instructing children with SEN compared to solely in-class support (i.e. being better able to make explanations and adapt the lesson on child's individual needs). Therefore, some STs saw this combined approach as having a positive psychological impact on them (i.e. felt more comfortable doing a lesson out of class compared to in class).

Some STs saw that a second adult in the classroom or by supporting a child with SEN in the classroom may cause noise or to distract children's attention. Hence, they saw the out of class support as having also a positive impact on all children, because it could result in limiting the other's children attention distraction. However, some teachers saw the out of class support as having some disadvantages for children at academic level (i.e. limited child's lesson participation and concentration in the classroom, limited learning motivation in the classroom or at home) and social level (i.e. social isolation from their classmates).

Lastly, teachers mentioned that withdrawal of children out of the mainstream classroom was also consistent with the individual child's preferences. An interesting finding was that three out of five children, who experienced out of class support, expressed their preference for this. Children who were in favour of this approach saw that the out of class support benefited them academically more compared to the in-class support. Furthermore, the children with Autism and Asperger syndrome gave an explanation which was more related to their difficulties than to co-teaching itself, as they saw the classroom environment as a noisy place in which they could not concentrate.

The above findings revealed that the way co-teaching was implemented in Greek secondary schools posed obstacles to some STs to provide effective academic support to children with SEN in the mainstream classroom and resulted in limiting academic benefits for children with SEN. What has been stressed in the co-teaching literature (Murawski, 2006, p. 226) is that if co-teaching actually involves a wide range of teaching approaches, specialized instruction or “specially designed instruction” involved in co-teaching, it could result in children’s academic progress. However, the investigation of co-teachers’ practices in the mainstream secondary classrooms showed that the teacher-centred teaching was mainly used by co-teachers, while alternative teaching approaches (e.g. based on grouping/teamwork, on the use of ICT, on role-play) were not used or merely used a limited extent. Just as in the international research evidence on co-teaching (Murawski, 2006) co-teachers did not use various teaching approaches which are considered as important in this teaching model. Specifically, teaching methods based on differentiation as well as social and behavioural intervention practices have been used by co-teachers to a limited extent or, it is argued, in a non-systematic way.

Limited use of social intervention and differentiation practices

Based on observation data, it should be noted that social intervention practices were used to a limited extent or not at all. Although some of the STs admitted that the children with SEN included in the mainstream classroom actually needed such intervention, they argued that they were not aware of how to implement such practices. Moreover, the GTs saw responsibilities oriented to children with SEN as belonging exclusively to STs. This finding could be explained by considering that the Greek co-teaching provision guidelines were focused on STs providing individual support to children with SEN. Also, this finding stressed the necessity of both GTs and STs having training in using such practices in order for the social needs of children with SEN to be met. Furthermore, the majority of teachers saw the aim of the secondary schooling as being oriented solely to children’s academic skills development. This finding could be explained by considering that the Greek secondary education level is an exam-oriented educational stage and thus, it is focused mainly on children’s academic progress.

Although differentiation is considered to be crucial for the successful inclusion of children with SEN it, in almost all sub-cases, except two ones (1st-1st, 3rd- 2nd), no differentiation methods were used by co-teachers. Both GTs and STs explained that they had doubts as to whether the Ministry of Education allows them to use differentiation methods, especially with regards to child’s assessment. Moreover, some teachers felt that they were not aware of how to use the method of differentiation and in which aspects/stages of children’s learning. According to the literature (Armstrong et al., 2000), differentiation considered to be crucial for children successful inclusion. Thus, the limited use of differentiation methods could also limit the potential positive academic outcomes of co-teaching to children with SEN.

5.3 Teachers’ perceptions of co-teaching

Teachers' perceptions of their roles in the co-teaching model

Teacher interviewees perceived *co-teaching* as one teacher teaching and the other assisting individually one child with SEN. In other words, they viewed co-teaching as individual or extra support to one child with SEN provided by the STs. Co-teachers' understandings of co-teaching are related to a number of definitions in the international literature on the subject (see indicatively some definitions in papers of Kilanowski-Press et al., 2010; Weiss & Lloyd, 2002) which refer to a simple placement of two teachers (one special and one general) in one mainstream classroom. According to these definitions co-teachers have distinct roles and are not interchangeable. Thus, it has been deduced that teachers, on the whole, considered co-teaching in a narrow way, which was also reflected in the allocation of their roles and responsibilities, the way co-teachers saw each other's roles, and the teaching practices that co-teaching pairs used (see in detail the above sub-chapters). This was consistent with the co-teaching literature which stressed that how co-teaching is implemented and what roles and responsibilities co-teachers undertake are closely associated with teachers' perceptions and understandings of them within co-teaching (Hantziadiamantis 2011; Hang & Rabren, 2009; Masropieri, et al., 2005; Murawski & Swanson, 2001).

Regarding the aim of co-teaching, there was both convergence and some discrepancy between the perceptions of GTs and STs. While, the GTs saw co-teaching as aiming to improve either child's academic attainment or social skills development, the STs saw co-teaching as having both social and academic aim. The different perceptions between the GTs and STs with regards to co-teaching revealed the need for co-teachers to develop common understandings about the aim of co-teaching or to set common long-term or short-term learning objectives in relation to children with SEN included in a classroom. According to Stefanidis and Strogilos (2015) common understandings could positively contribute to co-teachers developing mutually accepted teaching methods in order to support the inclusion of children with SEN in the mainstream classroom. Taking into consideration that teacher participants – in particular the GTs – did not receive any training in co-teaching (see in detail Teachers' training below), it could be argued that training in the basic principles of co-teaching and common training between co-teachers could indeed catalyse a positive influence in developing common understandings about co-teaching.

Teachers' perceptions of their collaborative experience and their perceived personal benefits

Teachers expressed positive views about their collaborative experience. Specifically, both GT and ST survey respondents expressed slightly positive views about *their collaboration with their partner* and their participation in a co-taught class (see chapter 4.1.8). Similarly, in most of the cases, co-teachers described their collaboration as positive. The cross-case analysis indicated various reasons why and factors that positively contributed to this harmonious collaboration, such as effective communication and interaction and close working relationship between the co-teachers, the shared understandings between co-teachers with regards to the aim of co-teaching and the clear allocation of co-teachers' responsibilities (i.e. co-teachers did not intervene in each other roles).

By contrast, in only two sub-cases teachers expressed negative views about their collaboration. The cross-case analysis indicated various reasons why and factors that affected this relationship. Unsurprisingly, these factors were exactly the opposite ones to the factors that affected a harmonious relationship. Namely, the limited communication and interaction between co-teachers, the fact that co-teachers did not share the same views with regards to the aim of co-teaching affected the poor working relationships between co-teachers. The above finding is consistent with the literature on co-teaching. As Jang (2006, p.179) noted, the “inter-subjectivity”, namely the exchange of ideas between teachers, the share of teaching experiences in the classroom and the dialoguing is considered to be the most important component and advantage of co-teaching. Lastly, teachers saw some other factors such as the unclear allocation of co-teachers’ responsibilities (i.e. the child with SEN was not perceived as a common responsibility between co-teachers), teachers’ negative personal characteristics (i.e. arrogant attitude) and reasons related to a specific child (i.e. the child’s very good school performance) as limiting co-teachers’ collaboration.

Similarly, the international research data in relation to co-teachers’ perceptions about their collaborative experience are mixed. Specifically, there is some research in which co-teachers expressed positive views about their collaborative experience (Austin, 2011; Saloviita and Takala, 2010; Walther-Thomas, 1997), while in some other studies in which teachers expressed negative views focusing on the difficulties or challenges faced (Salend et al., 1997).

The findings in the present study indicated that co-teaching pairs did not actually collaborate with each other in an extensive way and they did not commonly plan the lesson. This is because in almost all cases the co-teachers never collaborated in terms of issues related to all children (i.e. not commonly planned lesson presentation or feedback discussion about this, grading all children including the child with SEN). By contrast, teachers mainly discussed issues relevant to the child with SEN that was included in the classroom and to a limited extent i.e. child’s progress, child’s grading, child’s academic or behavioural intervention, test or teaching differentiation/adaptation to child’s needs. As a result of this limited collaboration, two teachers (2nd-1st, 4th-2nd) expressed neutral views about their collaborative experience. Teachers’ limited collaboration is not an unusual finding in the co-teaching literature. Murawski (2006) observing teachers in co-taught classrooms at a secondary school in Los Angeles found little collaboration and little role-exchange between teachers when co-planning was observed. Similarly, studies in the Greek co-teaching literature with regards to primary education (Stefanidis & Strogilos 2015; Strogilos & Tragoulia, 2013) were in accord with this as limited collaboration between co-teachers occurred.

Equally, the findings of the present study offer conclusive evidence to show that the way co-teaching is implemented in Greek secondary schools is largely inconsistent with the philosophy of co-teaching. This is because the first basic component of the co-teaching approach is considered to be the collaboration between co-teachers in the various stages of teaching

process (see analytically in chapter 2.4). As Buerck (2010, p. 6), stressed “for true co-teaching to occur, both professionals must co-plan, co-instruct and co-assess a diverse group of students in the same general education classroom”. Similarly, Friend et al. (2010) stressed that co-teaching is based on the cooperation of a general teacher and a special teacher in order to teach children with and without special educational needs who are educated within a mainstream classroom aiming to encounter pupils’ various needs. Clearly, these actions did not systematically occur in the present research context.

Cross-case analysis revealed several factors that affected co-teachers’ limited collaboration. These factors were related to systemic limitations, such as the limited time for collaboration and the absence of any official planning time for doing so, the fact that co-teachers’ roles and especially the ST’s role are not officially determined, the limited teaching hours that a ST was allocated to support a child with SEN and the fact that STs change a between schools. With regards to the impact of teachers’ different *knowledge background* on their collaboration, there was an inconsistency between the survey and cross-cases analysis evidence. The survey respondents saw the *different experience* and *knowledge background* in teaching children with SEN as not having a negative influence on their collaboration with their partners; with the GTs being more negative than the STs (see chapter 4.1.8). By contrast, some interviewees viewed that the differences in their partner’s knowledge about teaching children with SEN or knowledge in relation to co-teaching and their different subject specialism as affecting their limited collaboration. Similarly, Salend et al. (1997) investigated co-teachers’ perceptions about their co-teaching experiences, finding that teachers’ different philosophy and different instructional methods followed may pose obstacles to co-teachers’ collaboration. This inconsistency between the survey and interview participants may be indicative of the multitude of factors perceived as influential to collaboration.

What has been stressed in the literature (Friend et al., 2010; Masropieri et al., 2005; Harbort et al., 2007) is that co-teaching approach can be beneficial to teachers by giving them opportunities for their professional and personal development. However, teacher participants of the present study were quite sceptical about various issues in relation to the potential personal benefits of co-teaching for themselves. Firstly, both GT and ST survey respondents expressed slightly positive views about the improvement of their professional knowledge as a result of co-teaching and about the potential benefits of receiving feedback from their partner (see chapter 4.1.8). Similarly, while some GT and ST interviewees saw co-teaching as leading to an improvement in their professional knowledge, there were also some teachers who expressed some doubts about how worthwhile it was as a professional experience. While the ST survey respondents viewed co-teaching as a valuable experience, the GT survey respondents expressed slightly positive views about this (see chapter 4.1.8). This was also confirmed by the cross-case analysis, which revealed that some STs and especially some of the GTs viewed co-teaching as having neutral outcomes on themselves (i.e. neutral impact on professional development). However, some teacher interviewees saw co-teaching as having a positive impact (i.e. sense of relief as a result of sharing responsibilities, sense of happiness as a result

of contributing to children with SEN's learning) as well as a negative impact on their psychology (i.e. sense of unproductive as a result of focusing on an individual child).

The cross-case analysis contributed to the examination of some teachers' sceptical attitudes regarding their professional development. Indicatively, one GT saw that the ST's focus on one individual child with SEN resulted in limiting her interest towards developing her knowledge regarding this disability. Lastly, one pair of co-teachers stressed that their professional knowledge had not developed from using co-teaching but from teaching in a classroom where a child with SEN was included (i.e. learned new ways to differentiate her teaching into a child's needs). Indeed, other research has shown that professional development is not always prioritised by teachers. In a survey conducted by Takala and Uusitalo-Malmivaara (2012), co-teacher respondents saw the sense of mutuality, safety and welfare as the most important advantages of co-teaching for them compared to potential professional development.

Factors affecting co-teaching

Teachers' training

Despite some exceptions, cross-case analysis revealed that the most dominant issue that was extensively stressed by the majority of general and special teachers was the GTs' limited training in co-teaching (i.e. being unaware of the actual co-teacher's roles and of the co-teaching aim and models). Teachers' concerns about the lack of co-teaching training preparation and the limited information with regard their roles and responsibilities were also predominant among Greek primary teacher participants in the research conducted by Strogilos and Tragoulia (2013), Kabanellou (2011) and Arnidou (2007).

However, survey data (see Factors affecting co-teaching) revealed that the GTs and STs expressed different views from each other about the impact of limited training of GTs and STs on co-teaching. Interestingly, while the STs saw the GTs' training in co-teaching as affecting more the co-teaching implementation than the STs' training (the STs saw the *GTs' and STs' training in co-teaching* as the fourth and fifth most important factors respectively affecting co-teaching), the GTs expressed exactly the opposite view (the GTs rank the *GTs' training* in the ninth place and the ST's training in the fourth place). Therefore, survey results indicated that the STs felt more strongly than the GTs that the GTs' training is important for successful co-teaching implementation.

Both survey data (see Teachers' training in SEN) and cross-case analysis confirmed that the GTs were less informed about the co-teaching model compared to the STs. This is because all the GTs (in cases studies) and most of the GTs (in survey data) did not attend any preparatory programme at all. However, survey data revealed that the GTs were prepared to co-teach mostly by mentoring from an experienced teacher. By contrast, the majority of STs were prepared to undertake the post of co-teacher by attending two preparatory programmes, namely, an in-service training and a seminar organised by a university. Therefore, GTs found informal ways to become prepared in co-teaching i.e. by seeking advice and consultation by a

teacher, while the STs benefited by a more formal way of preparation i.e. in-service training, provided by the Ministry of Education. By contrast with the STs, most of the GTs were not trained in teaching children with SEN (see Teachers' training in SEN). Also, there was a difference between the GTs' and STs' level of training. While the STs were mostly highly trained in SEN (i.e. had a Master's degree), the GTs indicated less training (i.e. attended seminar). Lastly, cross-case analysis revealed that the general classics teachers seem to be more trained in SEN compared to the Maths teachers.

Therefore, cross-case analysis revealed that teachers stressed extensively the importance of both GTs and STs getting training in co-teaching (i.e. co-teaching implementation/models of co-teaching and the ST's various roles) and teaching children with SEN. The need for teacher training on co-teaching has been strongly emphasised within the literature. Indicatively, Buerck (2010) by interviewing pairs of co-teachers' found that both general and special teachers expressed concerns about inadequate training in co-teaching and as a result they felt unprepared to cover their post. Regarding what kind of training preparation should be provided to teachers, teacher survey respondents and interviews expressed their need to get practical experience in co-teaching and not only theoretical information. This is because survey results showed that teachers saw that the most useful ways to professionally develop in co-teaching was placement in a co-teaching classroom, consultation by an experienced teacher (mentor) in co-teaching, and a lesson/session in co-teaching during undergraduate studies. Similarly, the interviewees expressed their need for training which includes workshops and by contacting specialists in co-teaching. Moreover, teachers' training in co-teaching is considered to result in academic benefits for children both with and without SEN. Indicatively, Welch (2000) conducted experimental research using teacher training in co-teaching as an intervention process. Welch (2000) presented convincing evidence that children with and without SEN in a co-teaching classes improved their school achievement in reading and spelling as a result of this particular teacher training.

Despite this positive research on the benefits of training, both cross-case analysis and survey results showed that the STs expressed their disappointment about the in-service training. This is because the ST survey respondents saw the in-service training as the second least efficient way of getting prepared in co-teaching (see Teacher's training in co-teaching and perceptions of its potential usefulness to co-teaching). Teacher interviewees offered various reasons to justify their view that in-service training had various weaknesses, such as the following: inadequate or irrelevant information regarding the method of co-teaching, information already known, excessive theoretical information without including workshops, no information about social intervention practices and trainers perceived as not being aware of *co-teaching*, with no common training between the STs and GTs or trainees coming from all stages of education.

Positive attitudes towards children with SEN

The STs and especially the GTs seem to believe that positive attitudes towards children with SEN influenced co-teaching. Based on survey results, the GT and ST participants saw the GTs'

positive attitudes towards children with SEN as the second and the third most important factors affecting co-teaching. Moreover, the GTs believed more than the STs that *teachers' sensitivity towards children with SEN* is important for co-teaching implementation. Interestingly, the GTs saw the above factor as the one that most affected co-teaching.

Collaboration between co-teachers and teachers' personality

Based on both survey results and cross-cases analysis, teachers saw the collaboration between teachers as one of the most important factors for successful co-teaching. Interestingly, the GTs and STs survey respondents saw the harmonious collaboration between co-teachers as the third and the second most important factors affecting co-teaching. Thus, teacher interviewees highlighted in particular that a teacher's personality (i.e. negative or positive characteristics) affected co-teaching. Interestingly, the STs – in some cases – saw the GTs' personal characteristics as having a negative effect on co-teaching.

Within the relevant literature many factors have been identified as positively contributing to the successful implementation of co-teaching. The most important ones were seen to be the collaboration and communication between co-teachers (Sileo 2011; Hang & Rabren 2009; Wilson, 2005; Zigmond & Magiera, 2002). Hence, the co-teaching literature and research have focused on this issue. Indicatively, Mastropieri et al. (2005) observed co-teaching pairs through case studies and found that both excellent and ineffective partnerships occurred. However, the researchers linked the good ones with successful implementation of co-teaching, which resulted in successful inclusion of disabled children within mainstream classrooms. Lastly, the teacher participants of the above study saw that good collaboration within a co-teaching pair resulted in boosting children's academic progress.

Officially scheduled planning time

Teacher interviewees saw that the lack of officially scheduled planning time affected co-teachers' collaboration. However, survey results showed that GTs and STs expressed different views about this. While the GTs reported that the mutual planning time affects co-teaching to a limited extent, the STs saw the above factor as influencing co-teaching to a significant extent. Moreover, survey results indicated both GTs and STs viewed *the mutual planning time* as the third least important factor affecting co-teaching.

The survey data confirmed that the majority of GTs and STs did not have regular scheduled planning time during the school day (see chapter 4.1.6). Therefore, teacher survey and interviewee participants expressed the need for officially scheduled planning time. Similarly, Kobanellou (2011), investigating primary education special and general co-teachers' perceptions about co-teaching found that teachers' perceived limited co-planning time as a barrier to implementing co-teaching.

Survey results revealed that both GTs and STs agreed that co-teachers need officially scheduled planning time on a weekly basis and not so much on a daily basis (see chapter 4.1.7). Similarly, Hang and Rabren (2009), who surveyed co-teacher's perceptions, found that

all teachers reported that they need more common planning on a weekly basis in order for co-teaching to be successfully implemented.

Literature on co-teaching stressed that mutual planning time is a determining feature for successful implementation of co-teaching, helping co-teachers to effectively collaborate with each other. Particularly, as Hang and Rabren (2009) stressed, the mutual planning time enables co-teachers to share views about their roles, responsibilities, instructional methods, teaching approaches that are key components of successful co-teaching. Just as in the present study, Buerck (2010), Hang and Rabren (2009), Murawski (2006), Welch (2000) and Walther-Thomas (1997) conducted research on co-teachers perceptions about co-teaching found that teachers and expressed the need for more common planning time as limited mutual planning had a negative effect on their teaching.

Clear allocation and official determination of co-teachers' roles

Cross-case analysis showed that some GTs and STs saw that the educational law did not specify issues such as the co-teachers' roles and especially the ST's role. Thus, survey respondents (see *Teacher's perceptions towards recommended collaborative practices*) and both special and general teacher interviewees saw that co-teachers' roles should be clearly defined and allocated between the co-teachers at the beginning of the academic year. However, survey results indicated that teachers did not see the above factor as having a major effect on co-teaching, as the GTs and ST respondents ranked it respectively as the fifth and fourth least important factors influencing co-teaching.

This finding was consistent with the international literature on co-teaching, because as Fennick and Liddy (2001, p. 230) explain "the explicit description of roles between co-teachers is considered to be essential for a successful co-teaching eliminating role ambiguity". Various research findings stressed that a clear allocation and understanding of teachers' roles and responsibilities in a co-teaching classroom is as an important component of a successful co-teaching (Sileo, 2011; Hang & Rabren, 2009; Wilson, 2005; Zigmond and Magiera, 2002; Austin, 2001). Moreover, several studies investigating teachers' perceptions of their roles (Hang & Rabren, 2009; Buerck, 2010; Fennick and Liddy, 2001; Salend, et al., 1997) indicated that teachers had an unclear understanding of their roles and responsibilities, causing various misunderstandings and role confusion.

STs change many schools per day- STs' not employment at the beginning of the academic year

Regarding whether STs changing between schools affects co-teaching, there was an inconsistency between the cross-cases analysis and survey results. Both general and especially the special teacher interviewees saw the fact that the STs change between many schools as impeding co-teaching and co-teacher's collaboration. However, survey results showed that the GTs and STs had different views about this. While the GTs reported that the STs' participation in fewer classrooms affects co-teaching to a limited extent (second least important), the STs saw this factor as affecting co-teaching but not in a dramatic way (fifth least important).

Moreover, both GT and ST participants saw *the special teachers' collaboration with fewer general teachers* as least affecting the successful implementation of co-teaching.

The ST interviewees stressed extensively that the fact that STs are not hired at the beginning of the academic year negatively affects co-teaching. Similarly, the survey results indicated that the STs believed more than the GTs that the STs' employment at the beginning of the academic year is important for the co-teaching implementation. Similarly, the ST survey respondents also stressed the importance of the STs' employment at the beginning of the academic year because they saw this as the most important factor for the successful implementation of co-teaching. However, the GT survey respondents did not have the same view, because they saw this factor as the fifth most important factor affecting co-teaching.

Experience in co-teaching

Interestingly, survey respondents saw co-teaching experience as having a limited effect on co-teaching implementation. Indicatively, the STs and one GT saw the co-teaching experience as the second and the fourth least important factor affecting co-teaching. Indeed, only one ST interviewee considered the GTs' inexperience in co-teaching as affecting the collaboration between co-teachers.

Child's type/severity of SEN

While the survey respondents viewed the *Child's type/severity of SEN* as having a neutral impact on co-teaching, some teacher interviewees considered this factor as influencing the co-teaching. This is because they see that some children with SEN (e.g. with mild difficulties) could be more easily included in a mainstream classroom.

5.4 Outcomes of co-teaching from teachers' and children's perspective

Outcomes to children with SEN

Teacher survey and interviewee participants saw co-teaching as having positive academic and learning outcomes to children with SEN (i.e. children's with SEN academic progress, improved performance in tests, increased lesson participation and concentration, better lesson understandings, development of subject's knowledge). Similarly, various research data based on both direct and indirect examination of co-teaching outcomes (Tremblay, 2013; Hang & Rabren, 2009; McDuffie et al., 2007; Idol, 2006; Jang, 2006; Austin, 2001; Welch, 2000; Budah, 1997; Salend et al., 1997; Walther-Thomas, 1997) indicated that co-teaching resulted in the academic progress of children with SEN.

Interestingly, the majority of children with SEN viewed that co-teaching improved their academic performance during that academic year, as they received extra individual help. Thus, three children out of five expressed favourable opinions about a possible enrolment in a co-taught

classroom again. Similarly, several studies (McDuffie, et al., 2007; Jang, 2006; Wilson & Michaels, 2006; Gerber & Popp, 1999), which surveyed children's perceptions about co-teaching, indicated that children had overall positive perceptions towards co-teaching and the majority of them stated that they preferred co-teaching classrooms than traditional ones because they received more individual teaching and benefited from the variety of teaching methods.

However, in relation to whether co-teaching has an impact on children with SEN's concentration, teachers and children showed some divergence in terms of their perceptions. Teacher survey respondents and almost all interviewees indicated that co-teaching increased children with SEN's concentration. However, only one ST saw that STs whispering in children's ear may confuse them as a result of hearing two voices simultaneously. Three children out of five mentioned the fact that they became confused with two teachers speaking simultaneously as a disadvantage of co-teaching. Moreover, the children with Autism (3rd case study) and Asperger syndrome (4th case study) saw the classroom environment as a noisy place which affected their concentration and described this as a co-teaching disadvantage. Several studies in the co-teaching literature revealed that the different and various teaching approaches applied by co-teachers affected children's perceptions. Indicatively, Wilson and Michaels (2006) and Jang (2006) found that children listed various disadvantages of co-teaching with the most dominant of them being the various teaching strategies applied by co-teachers within classroom that make them feel confused.

Regarding the social and personal learning outcomes, teachers saw that co-teaching had not only positive but also negative outcomes for children with SEN. Specifically, among the various positive social outcomes that survey and interviewee participants mentioned were the following: children's with SEN social skills development, the promotion of their sense of belonging in classroom community, the enhancement of their interest in participating in learning and teamwork activities, the enhancement of their social acceptance by their peers and their interaction with their peers during break or lesson time. However, there was a discrepancy between the survey and interview participants about whether co-teaching resulted in interrupting children's relationships with other children as well as their social stigmatization. Specifically, while survey respondents did not see that co-teaching interrupted their social relationships with other children, some interviewees saw various potential social disadvantages of co-teaching to children with SEN, such as the limitation of their interaction with their peers as a result of STs escorting them during the break and children's dependence on the STs. Also, while the survey respondents slightly disagreed that co-teaching resulted in children with SEN being labelled negatively by their peers, some interviewees stressed that STs sitting next to children with SEN may result in children's social stigmatization.

Similarly, children also mentioned not only positive but also negative social outcomes of co-teaching. Indicatively, two out of five children saw that co-teaching resulted in the enhancement of their interaction and collaboration with their peers. By contrast, two out of five children saw

that co-teaching resulted in limiting their interaction with her peers during lesson or break time as a result of STs escorting them during the break or sitting next to them during lesson time. However, it is important to note that three out of five preferred sitting with the ST as they saw that this would result in developing their academic skills.

In general terms, teachers' and children's reports indicate that co-teaching has a positive social impact on children with SEN. However, both teacher and children's reports revealed, from some participants, a significant degree of doubt with regards to the impact of co-teaching on children with SEN's social relationships and their potential social stigmatization. The above finding indicates that children with SEN receiving extensive individual support by STs and having the STs' attention turned exclusively onto them may have a negative social impact on children themselves. It seems that both the *one teach-one assist* model of co-teaching and the ST's accompanying children with SEN during break-time as imposed by the policy of co-teaching guidelines, may affect children themselves. Hence, this has implications for developing practices that could limit STs supporting individual children in the classroom and thus, avoiding their social labelling. If teachers used the various models of co-teaching that were based on children's grouping and on teachers' *role-exchange* this may positively contribute to this attempt.

At a behavioural level, while the survey participants saw that co-teaching had a negative impact on children with SEN, the interviewees in the present study expressed the opposite view. Moreover, some interviewees mentioned that in cases in which children did not have behavioural difficulties, the co-teaching approach did not affect their behaviour. Similarly, children who had behavioural difficulties saw co-teaching as having a positive impact on them and children who did not face any behavioural difficulties, viewed co-teaching as not having any impact on them. Just as in the Gerber and Popp's (1999) study, one disadvantage that some children saw in the co-teaching approach was the increased teachers' attention towards their misbehaviour. This factor was indeed mentioned by one child (see case study 1st) in the present study. However, in the present study limited social and behavioural intervention practices were in fact observed to be used by co-teachers to children with SEN and in the majority of cases the above practices were used in a non-systematic way.

Similarly, research data about the social and behavioural outcomes of co-teaching on children with SEN revealed mixed results. Specifically, Vaughn et al. (1998) investigated the social effect on students enrolled in *co-teaching* classrooms compared with that in classrooms where the *consultation model* was used. These authors found that children participating in consultation classrooms had better quality friendships and gained increased peer acceptance than children enrolled in co-taught classrooms. Also, they found that children with SEN within consultation classes increased their mutual friendships during the academic year. However, in research conducted by Walther and Thomas (1997) and Salend et al. (1997), teachers reported that the social skills, self-esteem and self-confidence of children with and without SEN participating in co-teaching classrooms had improved. Similarly, in Hang and Rabren's (2009) research, both

co-teachers and pupils with SEN believed that co-teaching resulted in leaning progress for children with SEN. Also, co-teachers felt that the behaviour of children with SEN within co-taught classroom had also improved, with special education teachers being more in favour of this argument. Although there was not any evidence which proved the above consideration, some children with SEN nonetheless felt that their behaviour had improved.

Some other international studies about the behavioural outcomes of co-teaching to children with SEN have indicated mixed results. Specifically, Hang and Rabren (2009) found that co-teachers felt that the behaviour of children with SEN within co-taught classroom improved, with special education teachers being more in favour of this argument. However, the comparison of pupils with SEN's behaviour referral and absence records between co-teaching and non-co-teaching period revealed that the pupil's absence and behaviour management problems increased from the non-taught classroom to co-taught classroom and this increase was statistically significant. By contrast, Vaughn et al. (1997) investigated teachers' perceptions of children's behaviour in *co-taught* and *consultation* classes. They found that teachers perceived that children improved their behavioural skills in both settings, but these perceptions were not statistically significant.

Lastly, both survey and interview teacher participants as well as children with SEN mentioned that co-teaching had some positive outcomes for children with SEN's psychology, self and attitude, such as feeling self-confident self-secured, happy coming in school and the generation of positive attitudes towards co-teachers. Just as in the international literature (Hang and Rabren, 2009; Gerber & Popp, 1999; Walther-Thomas, 1997; Salend et al., 1997), children saw that co-teaching improved their self-esteem and their self-confidence.

Outcomes for all children

Both survey and interview participants saw co-teaching as having positive social outcomes for all children (i.e. social skills development, promotion of their social and emotional growth and their interaction and cooperation with children with SEN). With regards to the behavioural outcomes of co-teaching to all children in the co-taught classroom, there was a discrepancy between the teacher survey and interviewee participants. While the survey respondents considered co-teaching as having not only a positive but also a negative impact on all children, the interviewees mentioned only positive outcomes to all children.

However, at an academic and personal level, survey participants saw that co-teaching had a positive and negative impact on all children. Cross-case analysis contributed to the interpretation of the ambiguity in co-teachers' views. All interviewees saw that co-teaching had limited academic outcomes for all children. This is because they believed that STs focusing mainly on individual children with SEN resulted in co-teaching did not have much academic effect on all children. Regarding all children's concentration, while the survey respondents saw that co-teaching did not have a negative impact, some interviewees saw that the ST's presence in the classroom had some personal negative impact on all children, (i.e. children viewed STs as a "second pair of eyes" or a "second judge", felt jealousy as result of specific children

receiving individual help). By contrast, several studies (Buerck 2010; Idol, 2006; Jang, 2006; Budah et al., 1997) showed that co-teaching resulted in the academic improvement of typically developing children in co-taught classrooms. Specifically, Budah et al. (1997) drew comparisons between pupils identified as having an intellectual disability and low-achieving pupils who participated in co-taught and not co-taught classrooms and found that low-achieving pupils appeared to be better in some strategic skills and to achieve better test scores. The above finding revealed the need for co-teachers to use practices that could enable the ST's role expansion to all children (e.g. though using the various models of co-teaching) aiming at all children gaining not only socially but also academically.

5.5 Children with SEN's perceptions of co-teaching approach

Perceptions towards co-teaching implementation and its arrangements

Consistent with co-teacher's perceptions of co-teaching, children saw *co-teaching* as one teacher teaching and the other assisting individually one child with SEN. In other words, they viewed co-teaching as an individual or extra support to one child with SEN provided by the STs. The narrow way in which children viewed co-teaching could be attributed to the fact that they experienced co-teaching approach in this specific way. Moreover, it could be attributed to the different role designation between the general and special teachers.

Moreover, almost all children with SEN except one (1st case-study) were positive towards the idea of STs assisting all children in the classroom. Interestingly, some of them (2nd & 3rd case study) saw that by receiving individual help from a ST this may engender in other children negative feelings, such as jealousy. Thus, they saw that the ST's role expansion to all children as a way of eliminating other children's potential negative feelings towards themselves. Moreover, one girl (2nd case study) saw that some other children in the classroom needed more individual help than her. This finding indicates that a flexible classroom management approach is needed in order for all children in the classroom to access the social and academic benefits associated with the method of co-teaching.

Perceptions towards co-teaching approach and special teachers

Children with SEN interviewees expressed varied views in relation to whether they prefer to be supported by the method of co-teaching during the next academic year. Specifically, three children out of five expressed their preference for this. The children explained their preference by saying that co-teaching and special teacher helped their academic skills development or helped them to meet the academic requirements of the secondary school. However, they did not see that co-teaching resulted in their social skills development. The above children's perceptions could be explained if we consider that those children were partially being partially withdrawn out of the classroom. Thus, their perceived benefits of co-teaching were limited to the potential academic ones.

By contrast, two children out of five expressed their preference to not be supported by the method of co-teaching for the next academic year. Specifically, one pupil explained that co-teaching did not result in her academic skills development as she perceived herself as a very

high achiever. This child's view could be attributed to the limited differentiation that was used by co-teachers. The girl also mentioned that co-teaching or the support that she received by the ST did not result in her social skills development. Indeed, she mentioned several disadvantages in relation to the way the ST supported her or other children in the classroom. Specifically, she saw that the individual attention that she received from the ST actually limited her social interaction with other children during the lesson or break time. She also saw that the way ST supported other children in the classroom (i.e. by just providing them the right answer) did not actually benefited them academically. Similarly, the other child mentioned that he did not wish to have a second teacher in the classroom as he preferred sitting with other learners at the table rather than the ST. This child's perception can be explained if we consider that the model of one teach one assist was mainly implemented by co-teachers and limited grouping or social intervention practices were used by co-teachers in the classroom.

Interestingly, three out of five children expressed their preference for being supported by a ST exclusively out of class. Children saw that the out-of-class support helped more their academic skills development compared to in-class support. Also, two of them saw the out of class environment as a quieter place compared to the in-class environment. Taking into account that the STs provided individual support to children with SEN out of the mainstream classroom on a partial basis and limited differentiation or social intervention methods were used by co-teachers, we could consider that children did not see that the in-class support actually helped them.

5.6 My position as 'insider' researcher-considerations about potential bias

The investigation of the co-teaching model in the present study was associated with my personal dual positioning. Namely, I investigated the co-teaching approach not only a researcher, but also as a researcher who had previously worked as a special co-teacher for two academic years. Hence, the studied co-teaching approach – including teaching and working situations – were familiar to me. According to the literature (Berger, 2015; Bryman, 2008; Punch, 2005) the positioning of the 'insider' researcher that I attained had an impact on the research. This impact is reflected through all stages of the research, such as the research question(s) being investigated, the data collection, data analysis and interpretation (Berger, 2015; Bryman, 2008; Punch, 2005). According to Berger (2015), the positioning of the 'insider' researcher may influence the study with regards to three basic dimensions: the accessibility to the investigated field, the relationship between the researcher and the researched and finally, the way data were collected and analysed as well as the way the inferences were shaped.

The above three dimensions played also an important role with regards to the present research that I conducted. Based on my empirical experience as an 'insider' researcher, the fact that I had previously worked as a co-teacher and especially in the same district that the present research was conducted gave me easier access to the schools. Firstly, this was because I knew very well how to find the schools where co-teaching was implemented and how to gain access to them (i.e. contacts with the offices that were responsible for the operation of the secondary

schools at each district and awareness of the secondary schools' e-mail addresses). Moreover, I felt that the fact that I was working as a co-teacher during that specific academic year of research data collection positively contributed to gain permission by the head teachers of each school for the conduction of case studies. Indicatively, one head teacher said to me: "Oh, you are working at that school...that's nice ...go on then...the teachers that are co-teaching are in that office..."

Secondly, the fact that I worked as a co-teacher during the specific academic year of data collection influenced my relationship with the interviewees. Specifically, I felt that teachers and especially classics teachers were very willing to participate in my study. Furthermore, I felt that teachers perceived me as a colleague or as a teacher who shared common experiences with them and as a result they were speaking to me more honestly, even for their bad working experiences with their co-teaching partner. However, there were cases in which the balance between retaining a 'personal or sympathetic' stance and 'impersonal or rigid' stance on participants' stories and experiences was a challenging situation. Specifically, teachers expressed their negative thoughts or feelings about their co-teachers. Namely, I was always trying to maintain the balance between involving into people's stories and 'keeping distance' from them as a researcher.

Thirdly, my co-teaching experience facilitated the data collection phase of the research. In terms of the questionnaire instrument used, my experience as a co-teacher helped me to formulate the questions so as to be more comprehensive and clear to the respondents. Moreover, the co-teaching experience also helped me to better adapt some items of the survey questions that I adopted from similar studies conducted in various countries. In terms of the interview process, my co-teaching experience was advantageous to assist the interviewees in clarifying their thoughts. For instance, when teachers paused at length as they did not know how to explain their thoughts, I used to use probes or follow-up questions in order to help them clarify their point of view or position. Also, my co-teaching experience helped me to focus on specific aspects of participants' responses that would be positively contributed to the study. Additionally, based on my shared experience I knew not only what to ask, but also how to ask it. Last but not least, the research questions and the choice of mixed-method methodology were also based on co-teaching experience. This was because my co-teaching experience 'inspired' me to investigate the specific aspects of the co-teaching model and to choose this specific methodology which could in depth investigate the phenomenon.

However, there were times in which my co-teaching experience impeded the data collection phase. This was because the teacher participants due to the fact that I have co-teaching experience, assumed a priori that I can easily understand what they meant and thus, they felt they did not need to explain further their thought. For instance, some teachers had a tendency to leave their sentences unfinished. Specifically, they used to say: "*You know exactly what I mean..., I think, you know this very well, so I do not think to explain...*" etc. As Berger (2015, p. 224) explained, the sharing of common experiences between researchers and participants "...carries the dangers of participants withholding information...and researcher's taking for

granted similarities and overlooking certain aspects of participants' experience". To address this, I tended to prompt them to continue explaining their thoughts. Moreover, there were times in which the teacher interviewees asked my personal opinion for an issue (e.g. "*Am I right...? I have reacted like this...have I done well? What do you think?*" or they wished to share my personal experience especially with regards to my collaboration with my partner. Therefore, I realized that I tried to distance myself from sharing personal thoughts and experience in order to give more space to teacher participants to express themselves. At the same time, I felt that I needed to maintain an empathic stance for the benefit of maintaining harmonious communication. Hence, I tried very carefully to retain a balance between the above two perspectives. Lastly, during the data analysis especially with regards to the interview data, I tried carefully to listen to and transcribe the interviews and there were times in which I needed to note not only what was said by the interviewee, but also what it may mean.

However, according to the literature (Bryman, 2008; Punch, 2005) the data analysis and interpretation, especially in qualitative studies, are inevitably influenced by the researchers' various beliefs, values, knowledge and previous experience. Therefore, the positioning of a qualitative researcher and particularly the positioning of 'insider researcher' may both hinder and assist the process of data analysis and interpretation. However, acknowledging that the data interpretation is influenced by the researcher, the potential effects of the above process to the product of the research should be not only monitored by the researcher during the process, but also to be explained by him/her in order to enhance the credibility and the quality of the research (Berger (2015). According to Berger (2015, p. 221), the following approach is necessary:

"the researcher's conscious and deliberate effort to be attuned to one's own reactions to respondents and to way in which the research account is constructed, it helps identify and explicate potential effect...on the process and findings of the study and maintain themselves as part of the word they study".

Within the research literature the above process is termed as "reflectivity" (Berger 2015, p. 220).

Thus, the idea of 'reflexivity' acknowledges that knowledge is shaped not only by investigating a phenomenon but also by our experiences and knowledge about this phenomenon. As Berger (2015, p. 220) stressed, "the idea of reflexivity challenges the view of knowledge production as independent of the researcher producing it and of knowledge as objective". Also, the idea of reflexivity acknowledges that no research is free of bias. However, the fact that I acknowledged my positioning as an 'insider' researcher during the research process enhances the trustworthiness. Last but not least, the mixed methods research and thus, the triangulation of the findings positively contributed to the plausibility of the research findings.

5.7 Strengths and limitations of the study

Several issues in relation to the survey and cross-case phases limited the validity and reliability of the research. Firstly, with regards to the survey sample, teacher participants were not randomly selected, and they were not co-teacher partners who participated in the same co-teaching classroom. Therefore, according to the literature (Delice, 2010; Barlett et al., 2001) the generalisability of the survey findings is considerably limited. Moreover, questionnaires do not allow people to speak in a natural way about their perceptions and yet bias can not be completely limited (Johnson & Onwuegbuzie, 2004). Also, it is always questionable whether participants' responses actually correspond to their experience, which poses some obstacles to the validity of survey research (Bryman, 2008; Punch, 2005).

Moreover, with regards to the cross-cases research phase, observation data were collected by the researcher alone. Thus, not having another researcher to participate in the observations or analysis did not allow me to confirm the various data, which according to the literature (Bryman, 2008; Punch, 2005) results in limitations in the reliability of the research. Also, it is always questionable whether participants changed their typical way of behaving due to my presence in their classroom. This issue which is referred to in the literature as "observer effect" (Robson, 2002, p. 319) could threaten the validity of the research. Moreover, according to the literature (Punch, 2005) the analysis of the observations and interviews are inevitably influenced by the observer's interpretation, which may threaten the validly of the research.

However, the validity and reliability and thus, the quality of the research were enhanced in various ways. The mixed-method research resulted in a richer illustration of the implementation of co-teaching in the sample of Greek secondary schools, gaining better and in-depth understanding of co-teaching approaches. This is because the combination of survey and case-studies data enhanced the objectivity and credibility of the research through the triangulation of the findings. The credibility of the findings is also enhanced by the fact that the various data were confirmed through both teachers' and children's perspectives. Furthermore, the survey research enhanced the generalisability of the findings, while the case-study approach provided in-depth data, providing insights into teachers' and children's actions and perceptions.

Moreover, with regards to the survey sample, this research focused only on co-teaching implementation in secondary education schools, while other research conducted in Greece investigated both primary and secondary schools. Taking account that primary and secondary stages are very different in the Greek educational system (i.e. different curriculum, student's material, subjects, teacher's employment policy), the present research resulted in gaining more confidence in terms of the findings and inferences. Lastly, the questions of the survey instrument were based on existing instruments, which have been checked regarding their "validity and reliability" resulting in the use of quality research tools for this study.

5.8 Contribution of the research to the field of co-teaching

This study contributed positively to the current knowledge and understandings about the various inclusive practices or inclusive models implemented at international level. Within the Greek

context, co-teaching is a new inclusive model that has been implemented in the last decade. Considering that limited research has been conducted in this field, especially in secondary educational stage, this research contributed positively to the limited knowledge about how co-teaching is implemented in Greek secondary schools, the roles of teachers involved in co-teaching and the factors influencing the implementation of co-teaching. Specifically, this study has shown that the way co-teaching is implemented in Greek secondary schools is mostly the model of one teach one assist, while the various models of co-teaching or grouping methods were implemented to a limited extent.

Moreover, this research contributes to the limited research data about what co-teachers actually do within co-teaching classroom, what roles co-teachers and especially the special teachers adopt within this approach. Moreover, this research positively contributed to the limited data about how co-teachers perceive and make sense of co-teaching and their roles and also how co-teachers justify their practices with regard to their understanding of the role. Teacher interviewees viewed co-teaching as individual or extra support to one child with SEN provided by the STs. Teachers considered co-teaching in a narrow way, which was also reflected in the distinct roles and responsibilities that co-teachers adopted. Specifically, co-teachers saw the GT as responsible for all children, while the ST as responsible for an individual child with SEN included in a mainstream classroom.

Thus, the ST role was limited to individual children with SEN, while limited ST role expansion to all children was observed. Hence limited academic and social outcomes were perceived by co-teachers as applying to all children in the mainstream classroom. This study also revealed that co-teachers and especially the GTs were sceptical about the sharing of the various classroom responsibilities. Also, this study showed that the limited teacher's training in co-teaching approach and the Greek provisional guidelines of co-teaching, which promote the individual support of children with SEN by the ST, contributed negatively to co-teachers perceiving children with SEN in the classroom as solely STs' responsibility. Moreover, the limited use of grouping and teamwork activities were viewed by teachers as limiting the ST role to individual children. Indeed, observations confirmed that the method of grouping actually enabled the STs to intervene with more children. This study showed specifically that, in cases in which grouping methods were used by co-teachers in the classroom, the ST role expanded to all children and consequently, positive academic and behavioural benefits were seen.

Moreover, the approach of children's withdrawal out of class was implemented to a significant extent. This indicates that the model of co-education or parallel support that is implemented in Greek secondary schools seems distant from the basic principles of co-teaching and inclusion. This is because the inclusive model of co-teaching is defined as the collaboration between a general and a special educational teacher with an aim to provide effective instruction to children with various learning needs in a mainstream classroom, including children who identified as having special educational needs (Friend, et al., 2010). Interestingly, this study also revealed that it is the STs who preferred this combined approach and not the GTs. This is because, the STs saw that the combined approach of in- and out-of-class support could have better

academic outcomes for children with SEN compared to solely in-class support. STs also saw that they could academically support children with SEN better outside of the mainstream classroom. Therefore, this study revealed that the way co-teaching was implemented in Greek secondary schools posed obstacles to some STs to provide effective academic support to children with SEN in the mainstream classrooms.

In addition, considering that the approach of co-teaching is close to the model of one teach one assist, the present study positively contributed to understanding the perceived social and academic outcomes of this model. Specifically, the present study revealed that from both teachers' and children's perspective the model of one teach-one assist seemed to have positive academic outcomes for children with SEN. However, considering that some children with SEN were partially being withdrawn out of class, the potential positive academic outcomes could be attributed to this in- and out-of-class support. Moreover, the limited differentiation methods that co-teachers used in the classroom seemed to limit the potential positive academic outcomes for some children with SEN, especially those who were high achiever students.

By contrast, the study revealed the model of "one teach one assist" seemed to have not only positive but also negative, social and personal outcomes for children with SEN. In general terms, teachers' and children's reports indicate that co-teaching has a positive social impact on children with SEN (i.e. children with SEN's social skills development, the promotion of their sense of belonging in classroom community). However, both teacher and children's reports revealed some scepticism about the impact of co-teaching on children with SEN's social relationships and their potential social stigmatization. From both teachers' and some children's interview perspective it seems that the model of one teach-one assist limited some children with SEN's social interaction and interrelationships with the remaining children in class and during the breaks. Moreover, from some teacher's and children's perspective, the exclusive and individual attention that children with SEN got from the ST (i.e. sitting next to children with SEN, escorting them during breaks) resulted in the child's stigmatization. The limited social intervention practices (i.e. grouping methods) that co-teachers used in the classroom seemed to limit the potential social outcomes to children with SEN.

Also, this study contributed to the limited knowledge about children's perceptions regarding co-teaching and therefore, to the improvement of co-teaching practices. Furthermore this study –as far as I am aware – has been the only research within the Greek educational context that focused on the perceptions of pupils with SEN regarding this model (implementation, outcomes, advantages/disadvantages, preferences). Specifically, this study revealed that children's perceived benefits of co-teaching were limited to the potential academic ones. By contrast, they did not see that co-teaching resulting in their social skills development. Some children saw the model of "one teach one assist" as resulting in their social stigmatization and in their limited social interaction with their peers. As a result, some children with SEN expressed their unwillingness to be supported by a ST at the next academic year. Moreover, children with SEN who experienced the out-of-class support expressed their preference being supported out of the

mainstream classroom. This is because they saw that it benefited them academically. Therefore, this study has revealed that the way co-teaching was implemented in Greek secondary schools resulted in limiting academic and social benefits for children with SEN.

In addition, this study indicated that co-teaching pairs did not actually collaborate with each other in an extensive way and they did not commonly plan the lesson jointly. Teachers mainly discussed issues relevant to the child with SEN that was included in the classroom and to a limited extent. Several systemic limitations were seen by co-teachers as affecting their collaboration such as the limited time for collaboration and the absence of any official planning time for doing so, co-teachers' roles and especially the ST's role not being officially defined or audited, the limited teaching hours that a ST was allocated to support a child with SEN and the fact that STs change between schools. Additionally, this study revealed that the different subject specialism between some pairs of co-teachers negatively affected their each other collaboration. Interestingly, teacher participants of the present study were quite sceptical about various issues in relation to the potential personal benefits of co-teaching on themselves (i.e. improvement of their professional knowledge and the extent to which co-teaching was a worthwhile professional experience). The limited co-teacher's collaboration, the distinct roles between co-teachers and the ST's focus on individual children with SEN seemed to exacerbate the teacher's sceptical attitudes regarding the potential benefits of co-teaching on themselves. Furthermore, the study contributes to the development of knowledge regarding the factors that influence co-teaching from the perspective of those who are mainly involved in its practical implication, namely children and teachers. Specifically, this study revealed teachers believed that among the most important factors affecting co-teaching were both GTs' and STs' limited training in co-teaching. Moreover, survey results indicated that the STs believed more than the GTs that the GTs' training is important for the successful co-teaching implementation. Regarding what kind of training preparation should be provided to co-teachers, teachers expressed their need to gain practical experience in co-teaching and not only theoretical information. Interestingly, the STs expressed their disappointment about in-service training in co-teaching as they saw this training had various weaknesses (i.e. inadequate information or not being closely associated with the method of co-teaching or providing information already known and heavily theoretical information without including workshops). Specifically, the ST respondents saw the delayed employment of special teachers at the beginning of the academic year and the fact that special teachers change between schools as limiting the successful implementation of co-teaching. Lastly, the GTs respondents saw teachers' sensitivity and positive attitudes towards children with SEN as the most important factors for the successful implementation of co-teaching.

If we consider that the teachers' perceptions towards the various inclusive models influence the practical implementation of these models (Avramidis & Kalyva, 2007), this research contributed to the disclosure of how successful inclusive educational practices could be promoted. Thus, this study could be an important contribution to the development of a protocol which could evaluate the quality of co-teaching aiming to improve the quality co-teaching practices at a

national and international level. Lastly, this research contributed to the development of knowledge of how pupils could be effectively included in mainstream schools aiming at understanding current support services and they can be enhanced in the future.

5.9 Implications of the study

Based on the study's results and teachers' suggestions for change, various implications for practice and recommendations can be provided. Firstly, teacher training in co-teaching is considered to be crucial for the successful implementation of co-teaching. Specifically, the Ministry of Education should provide training to STs and especially to GTs in co-teaching via in-service training. The in-service training should include information exclusively oriented to co-teaching i.e. co-teacher's roles and responsibilities, models of co-teaching, in order for teachers to develop their professional knowledge about the co-teaching model. This training should include presentations of case studies in co-teaching and consultation in relation to the obstacles or barriers that co-teachers face. Moreover, teachers having training in various teaching methods (i.e. teamwork and children's grouping, differentiation) and social or behavioural intervention practices would help teachers to manage mixed-ability classrooms more effectively. Also, this training should be focused not only on the presentation of the theoretical framework of co-teaching but also on helping teachers to acquire practical experience in co-teaching. Thus, teacher's placement in co-teaching classrooms, visits in co-teaching classrooms and workshops on co-teaching are suggested in order for teachers to associate the theory with praxis/practice and see how the various models would be implemented in praxis. Furthermore, joint training between GTs and STs who co-teach and presentations with information about how co-teachers could collaborate with each other (key features of a good collaboration) and in which aspects of the teaching process are considered to be very important for teachers to co-teach in the same classroom. Finally, various alterations in relation to the implementation of the in-service training are needed, such as segregation of trainees according to their education's stage and specialism, longer duration training or training conducted on a regular basis and trainers being well informed about the co-teaching model or experienced and trained in co-teaching.

In addition, teachers should have access to preparation in co-teaching during their undergraduate studies. Specifically, the Ministry of Education should make changes in relation to the curriculum of Undergraduate studies in order that all student teachers can engage with the basic principles of co-teaching. Specifically, the curriculum of Undergraduate studies in Education should include lessons or sessions about co-teaching and teamwork and grouping teaching methods. Especially, due to the fact that all teachers stressed their need to acquire practical experience in co-taught classrooms, student placements in co-teaching classrooms are considered to be very important for teacher's co-teaching preparation.

Moreover, changes are needed in relation to the co-teaching implementation or co-teaching provision at various levels. Firstly, at a legislative and systemic level, the term co-teaching

should be clearly and officially defined with the co-teachers' roles and responsibilities officially outlined and shared. Furthermore, the general and special education co-teachers should adopt the same role designation so that teachers themselves and children do not perceive their roles as distinct. Moreover, officially scheduled planning time on a weekly basis is needed in order to facilitate co-teachers' collaboration. Alterations in relation to STs' employment in schools are needed. Specifically, the STs need to be employed on time or at the beginning of the academic year and be required to work in fewer schools in order to effectively support children with SEN in the mainstream classroom, resulting in successful implementation of co-teaching. Lastly, the Diagnostic centres (KEDDY) should specify that all children with SEN can be supported by a special teacher in the classroom, if a special teacher is located in their own classroom. This could positively contribute to the ST role expansion to more than one child.

Besides the aforementioned, alterations are needed at a practical level. Firstly, it is important to work on developing co-teaching practices that could enable both GTs' and STs' equal involvement in classroom teaching and management as well as the ST's role expansion to all children. Secondly, alterations need to be made in relation to practices that co-teachers use in the co-taught classroom so that the co-teaching approach promotes the inclusion and learning support of children with SEN in the mainstream classroom. Specifically, the use various teaching approaches and methods that enhance all children's social skills development, (i.e. teamwork and grouping) and various teaching approaches and methods that enhance all children's learning support of children with SEN (i.e. differentiation) are considered to be necessary.

Lastly, various alterations at secondary school level are needed for the successful implementation of co-teaching. For example, differentiated or flexible curriculum, ICT availability, extension of lesson time duration, reduction of the number of children in the classroom, handbook/student's material alterations, focus not only on children's academic development (i.e. exam-oriented system) but also on their social skills development and flexible timetable that could allow special teachers to effectively support children with SEN are all considered to be necessary for the effective inclusion of children with SEN in mainstream classrooms.

Finally, based on teachers' views, some key features of effective collaboration between co-teachers could be provided. Firstly, a clear allocation of co-teachers' roles is considered to help the collaboration between co-teachers. Moreover, teachers should develop various social skills (i.e. communication, empathy, trust, willingness to solve disagreements, elimination of selfish emotions and prejudices against children with SEN, receptiveness to new suggestions and teaching practices as well as to any consultation and feedback). Moreover, teachers should arrive at mutually-agreed views in relation to the aim of co-teaching and the potential of children with SEN. Lastly, the findings indicate that the same subject specialism of co-teachers can facilitate their collaboration.

5.10 Suggestions for further research

The present study showed mixed results with regards to the social, personal and behavioural outcomes of children with SEN from both teachers' and children's perspectives. Thus, further research is needed in relation to the potential outcomes of co-teaching to children with SEN's learning progress and social and behavioural skills improvement, in order to obtain a richer picture about this issue. Gathering data about the outcomes of children with SEN before and after receiving the co-teaching provision through experimental research would be a worthwhile direction for further research. Moreover, it is also vital to collect further data with regards to potential co-teaching outcomes in specific subject areas of curriculum – such as humanities and sciences or in relation to specific children with SEN's type/severity of impairment – so that appropriately-tailored support can be developed and offered.

Additionally, teachers saw training in co-teaching and mutual planning time on a weekly basis as factors affecting the successful implementation of co-teaching. Thus, experimental research that introduces the above factors as an intervention process would indicate any differences in co-teaching practices, effectiveness and potential outcomes of co-teaching to children with SEN or to all children.

5.11 Conclusion

To sum up, the present study has indicated that the co-teaching approach which is implemented in Greek secondary schools is close to the model of "one teach-one assist". Also, the approach of withdrawing children with SEN out of class was implemented to a major extent. Moreover, limited differentiation and social intervention practices (i.e. grouping methods) were used by co-teachers in the classroom, limiting the potential positive outcomes of co-teaching to children with SEN. Moreover, the limited time for collaboration, the limited teacher training in co-teaching and co-teacher's different subject specialism were regarded by teachers as being some of the main factors impeding the successful implementation of co-teaching. Also, from the perspectives of both teachers and children with SEN the approach of co-teaching had not only positive but also negative social and personal outcomes to children with SEN. Moving forward, this thesis has argued for the importance of co-teaching. It is hoped that positive findings can be disseminated and continually enhanced. It is also hoped that further research will be undertaken so that solutions to existing barriers can be implemented and common understandings of co-teaching can be reached. In this way, quality learning opportunities can be made available which are suitable for forthcoming generations of children with SEN as well as all their peers in mainstream classrooms.

Appendices

Appendix 1

Models of co-teaching analyzed in 3 dimensions

	Phases teaching	Grouping	Content
Parallel	Planning: joint Acting – instruction & managing: separate Reviewing – monitoring: separate Reviewing- assessing: joint	2 groups (students with SEN not necessarily in one group)	Same content/material but enhancing differentiation and student's participation
Station	Planning: joint Acting – instruction & managing: separate Reviewing – monitoring: separate Reviewing- assessing: joint	3 groups of students and 3 stations in fixed position/ table. Students with SEN not necessarily in one group (heterogeneous groups). Each group of students	Instruction is divided in 3 parts Different content /instruction/goal in each station e.g. Different activities for each station regarding multiplication

		rotates among the stations and at the third work independently.	facts
Alternative	Planning: joint Acting – instruction & managing: Separate, one with the large group, and the other with the small group Reviewing – monitoring: separate Reviewing- assessing: joint	split into 2 groups: one large, one small	Different content for each group- The content of the small has as a purpose the remediation, enrichment etc of students.
Teaming	Planning: joint Acting – instruction & managing: joint Reviewing – monitoring: joint Reviewing- assessing: joint	One Large group	Same content but using simultaneously different and various instructional approaches e.g. two ways to solve a problem
One teach, one assist	Planning: joint Acting – instruction & managing: not instruction at all for one teacher Reviewing – monitoring: joint Reviewing- assessing: joint	One large group or small groups	Same content for all, but with individualized support
One teach, one observe	Planning: joint Acting – instruction & managing: not instruction at all for one teacher Reviewing – monitoring:	One large group	Same content for all children- one teacher teaches and the other gathers

	joint Reviewing- assessing: joint		information regarding some children.
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Appendix 2

Dimensions of co-teaching	Examples of dimensions		Parallel teaching	Station teaching	Alternative Teaching	Team teaching	One teach one assist	One teach one observe
1. Interacting in phase of teaching	Planning	joint	✓	✓	✓	✓	✓	✓
		separate						
	Doing- Instruction	joint				✓	Not instruction at all for one teacher	Not instruction at all for one teacher
		separate	✓	✓	✓			
	Doing - Behaviour managing	joint				✓	✓	Not managing at all for one teacher
		separate	✓	✓	✓			
	Reviewing - Monitoring learning	joint				✓	✓	✓
		separate	✓	✓	✓			
	Reviewing and	joint	✓	✓	✓	✓	✓	✓

	evaluation-End of lesson assessments	separate						
2. grouping	split class in to 2 groups	✓						
	Split class into n groups					✓		
	Large group and small group/s (e.g. n=5)			✓				
	Start one group; split into 5 small groups							
	Split class into 3 groups		✓					
	One large group				✓	✓	✓	
3. content	Same for all				✓	✓	✓	
	Different for groups			✓				
	Same content using instructional differentiation	✓						
	Same content using instructional differentiation but the instruction not simultaneously for each group		✓					

Appendix 3 Questionnaire

Teacher: General education teacher/Special education teacher

Specialism: _____

1. Gender: Female/ Male

2. Age:

3. Years of Professional teaching experience: _____

4. Years of Professional teaching experience as a co-teacher: _____

5. Only for Special education co-teachers

Total number of co-teaching classrooms that you are participating in: _____

Total number of children that are diagnosed as needing co-teaching in order to be included in a mainstream classroom within your co-teaching classrooms? _____

6. How many children formally identified by KEDDY as having special educational needs do you have within your classroom (*Note for special teachers: If you participate in more than one co-teaching classrooms please focus on one co-teaching classroom?*) _____

7. In your classroom, how many children are diagnosed as needed co-teaching in order to be included in a mainstream classroom? (*Note for special teachers: If you participate in more than one co-teaching classrooms or if you co-teach with more than one general education teacher, please focus on the same co-teaching situation as you have initially done*) _____

8. What kind of special educational needs/difficulties do these children face? Please, tick as many that apply:

Speech and Language Delay
 Specific learning difficulty (i.e. dyslexia, dyscalculia)
 Mild intellectual Disability
 Moderate intellectual Disability
 ADHD
 Physical/Motor Impairment
 Emotional Disturbance
 Challenging Behaviour
 Brain Injury/Neurological disorder
 Autism
 Visual Impairment
 Hearing impermanent
 Other _____

9. Do you have any training in teaching pupils with special educational needs or in Special education?

Yes / No

10. If yes, what training particularly? Please tick as many:

Undergraduate studies in Special education	Yes / No
Masters in Special education	Yes / No
PhD in Special education	Yes / No
Seminar in Special education	Yes / No

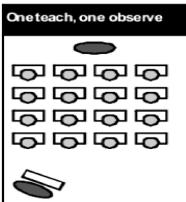
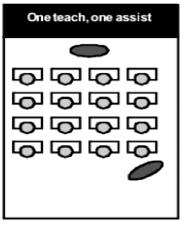
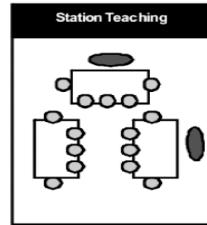
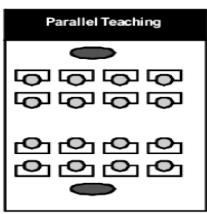
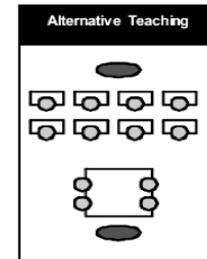
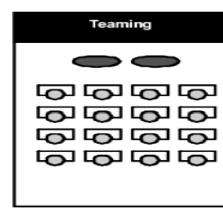
11. What kinds of preparation do you have for co-teaching and kinds of preparation do you think would be useful to co-teaching?

Please, tick Yes/No beside each of the following preparations that best describes your perception as a collaborative teacher. Please, rate how useful do you think such preparation might be, by circling the number from **1 (Not at all Useful)** to **4 (Very Useful)** beside each of the following preparations that best describes your perception of its usefulness to a co-teacher.

	Yes 1	No 2	Utility			
1. Attended a lesson/session relevant to <i>co-teaching</i> during undergraduate studies			1	2	3	4
2. Attended a lesson/session relevant to <i>co-teaching</i> during postgraduate studies			1	2	3	4
3. Student teaching placement in a co-teaching class			1	2	3	4
4. In service school distinct training courses on co-teaching			1	2	3	4
4. Session/lesson relevant to <i>co-teaching</i> in a training seminar organised by a University			1	2	3	4
6. Session/lesson in a relevant to <i>co-teaching</i> training seminar organised by a private entity/body			1	2	3	4
7. Mentoring by another teacher who has experience or knowledge in co-teaching			1	2	3	4

12. Which of the models of co-teaching below do you usually use within your classroom and to what extent?

Please, read the options first and think for a while before selecting (by tick) the best fit for what you usually do. **Note for special teachers:** *If you participate in more than one co-teaching classrooms or if you co-teach with more than one general education teacher, please focus on the SAME co-teaching situation as you have initially done*

		Very often 1	Often 2	Not often 3	Never 4
	One teacher leads the teaching while the other observes the behaviour and academic performance of a specific pupil/s				
	One of the two teachers takes the teaching role and the other circulates among students in order to provide individual support to them or to one student if necessary.				
	Children are separated into two or more groups or learning stations and teachers provide individual support and instruction at each of them				
	Each teacher delivers either the same or similar teaching to half the class or other classroom groupings				
	One teacher works with most students while the other works with a small group aiming to enhance the teaching provided by the other co-teacher e.g. remediation, enrichment, assessment, pre-teaching or another purpose.				
	The two co-teachers equally plan and teach a lesson as well as assessing the learning of all children and having the responsibility of all children.				

13. Which of the above responsibilities belong to just one the co-teachers or illustrate a joint responsibility?

For each statement below, please put a tick in the column that best represents how the responsibilities are allocated between the co-teachers. (**Note for special teachers:** If you

*participate in more than one co-teaching classrooms or if you co-teach with more than one general education teacher, please focus on the **SAME** co-teaching situation as you have initially done)*

Responsibilities	General education responsibility 1	Mostly general education 2	Joint 3	Mostly special education 4	Special education responsibility 5	6
1. Take students identified as having SEN out of help <i>If not applicable please note no. 6</i>						
2. Suggest goals & objectives for the IEP of students with disabilities						
3. Adapt lessons, materials for students with disabilities						
4. Work with students with disabilities in the co-teaching class						
5. Work with any students in the co-teaching class						
6. Monitor progress of students with disabilities						
7. Monitor progress of any students						
8. Know strengths and weaknesses of students with disabilities						
9. Know strengths and weaknesses of any students						
10. Monitor/Work with behaviour problems of students with disabilities						
11. Monitor/Work with any student's behaviour problems						
12. Teach learning strategies and study skills to the class						
13. Select teaching methods						
14. Group the children within classroom						
15. Set rules for student behaviour						
16. Leads in a co-taught classroom						
17. Select instructional technology for the class						
18. Plan daily the content of the lesson						
19. Present/teach new content within classroom						
20. Grade/evaluate all students						
21. Grade/evaluate students with SEN						
22. Assign work to all students						
23. Assign work to students with SEN						
24. Arrange the physical classroom environment						
25. Meets and informs the parents of disabled students about their progress and behaviour						
26. Meets and informs all students' parents about their progress and behaviour						
27. Select activities within classroom						

14. To what extent do you have mutual planning time?

*(Note for special teachers: If you participate in more than one co-teaching classrooms or if you co-teach with more than one general education teacher, please focus on the **SAME** co-teaching situation as you have initially done)*

Do you have regularly scheduled planning time with your co-teacher during the school day?

Yes / No

If yes, "How many hours each week do you plan with your co-teacher?" _____

15. To what extent do you agree/disagree with the following statements which describe recommended collaborative practices? Please, tick:

	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
1. Co-teachers need common planning time officially scheduled during school hours to coordinate efforts in the collaborative class					
2. Co-teachers should meet daily to plan lessons					
3. Co-teachers need a weekly planning period					
4. Co-teachers should share classroom management responsibilities					
5. Co-teachers should share classroom instruction					
6. Co-teachers should establish and maintain specific areas of responsibility					
7. Special teacher should be a resource to all students in a collaborative class					
8. Special teacher should withdraw pupils with SEN out of class					

16. To what extent do the following statements describe your experience of collaboration with the other teacher and your participation in a co-teaching classroom? Please, tick:

(Note for special teachers: If you participate in more than one co-teaching classrooms or if you co-teach with more than one general education teacher, please focus on the SAME co-teaching situation as you have initially done)

	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
1. My co-teaching partner and I work very well together.					
2. In my collaborative experience, I do more than my partner.					
3. Our different background of knowledge in teaching children with SEN hinders our collaboration					
4. Our different experience in teaching children with SEN caused problems to our collaboration					
5. Experience in co-teaching has improved my teaching.					
6. Co-teaching is a worthwhile professional experience					
7. My partner and I solicit each other's feedback and benefit from it					
8. I enjoy participating in a co-teaching classroom					

17. To what extent you agree/disagree with the following statements which describe potential outcomes of co-teaching for children with SEN? Please, tick:

Co-teaching resulted in students with SEN:	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
1. Improving their academic learning					
2. Having difficulties in adjusting to the higher academic expectations of a mainstream classroom, (i.e. curriculum)					
3. Learning new ways to cope with their exercises/homework					
4. Struggling to engage with the learning activity					
5. Increasing positive feelings about themselves as capable learners					
6. Reducing their self-confidence					
7. Understanding better their weaknesses and their strengths					

8. Undermining their self esteem					
9. Becoming more interested in participating in learning activities					
10. Undermining their concentration					
11. Being better able to control their behaviour their					
16. Undermining their interaction with their peers during break time					
13. Being labelled negatively by their peers					
21. Interacting more with their peers during break time					
15. Avoiding social isolation during lesson time					
12. Displaying more challenging behaviour					
17. Reinforcing their social skills (i.e. communication, cooperation, interpersonal relationships)					
18. Promoting the sense that they belong in classroom community					
19. Interrupting their social relationships with other children (i.e. friendships)					
20. Undermining their interaction with their peers during lesson time					
14. Being socially accepted by their peers					
22. Promoting their participation in teamwork activities					

18. Co-teaching resulted in all students:	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
1. Improving their academic learning					
4. Promoting their acceptance of individual differences					
3. Receiving less attention and support in their learning					
2. Hindering their efficient learning					
5. Becoming more intolerant of students of disabilities					
9. Exhibiting challenging behaviour					
7. Becoming more interested in participating to learning activities					
8. Improving their behaviour					
6. Undermining their concentration					
10. Promoting their social and emotional growth (i.e. empathy, sensitivity, mutual aid, solidarity, mutual understanding)					
11. Promoting their interaction and cooperation with disabled students					

19. To what extent the following factors contribute to a successful implementation of co-teaching?

In the table below is a list of factors that could potentially facilitate or influence the implementation of co-teaching. For each factor please rank how important it is, one a scale of 1 (not at all important) to 4 (very important).

	Not at all important	Of limited importance	Somewhat important	Very important
1. Training of general education teachers in co-teaching				
2. Training of special education teachers in co-teaching				

3. The severity of child's/children's type of special educational need that is/are included in a co-teaching class				
4. Frequent and harmonious collaboration with parents				
5. Clear allocation between co-teachers of their roles and responsibilities				
6. Harmonious collaboration and communication between co-teachers				
7. Positive attitudes of general education teachers towards special education teachers				
8. Sensitivity of teachers towards disabled students				
9. Sufficient/adequate supplies and teaching aids (e.g. materials, equipment)				
10. Length of experience in co-teaching				
11. Mutual planning time				
12. Employment of special co-teachers at the beginning of each academic year (and not at the middle of the year)				
13. Special co-teachers participating in fewer mainstream classrooms				
14. Special co-teacher collaborating with fewer general education teachers				

Thank you for your participation

Please, it would be very important for this survey if you encourage your co-teaching partner(s) to complete this questionnaire as well, if he/she has not done so yet

Appendix 4

MSc, PhD, EdD & DEdPsych theses.



Graduate School of Education

Certificate of ethical research approval

MSc, PhD, EdD & DEdPsych theses

To activate this certificate you need to first sign it yourself, and then have it signed by your supervisor and finally by the Chair of the School's Ethics Committee.

For further information on ethical educational research access the guidelines on the BERA web site: <http://www.bera.ac.uk/publications> and view the School's Policy online.

READ THIS FORM CAREFULLY AND THEN COMPLETE IT ON YOUR COMPUTER (the form will expand to contain the text you enter).
DO NOT COMPLETE BY HAND

Your name: XANTHOPOULOU PINELOPI

Your student no: 600052764

Return address for this certificate: Thessalonikis 40, Kozani, Greece

Degree/Programme of Study: PhD

Project Supervisor(s): Brahm Norwich, Jane Seale

Your email address: px206@exeter.ac.uk
pinelopi.xanthopoulou@gmail.com

Tel: 00306934879177

I hereby certify that I will abide by the details given overleaf and that I undertake in my thesis to respect the dignity and privacy of those participating in this research.

I confirm that if my research should change radically, I will complete a further form.

Signed:  date:.....03/03/2015
.....

Certificate of ethical research approval

TITLE OF YOUR PROJECT:

Co-teaching in Greek mainstream secondary schools: The implementation of co-teaching in mainstream secondary schools. Special and general education teachers' and disabled children's perceptions of co-teaching

1. Brief description of your research project:

The current research project is focusing on the ***way co-teaching is implemented*** by general and special co-teachers in secondary education schools in Greece. Specifically, this project aims to focus on co-teacher's roles within a co-teaching classroom, to identify possible models of co-teaching, strategies that are used by co-teachers.

Furthermore, this project aims to focus on ***co-teachers' and disabled children's perceptions*** with regard to the co-teaching inclusion model. Specifically, this project aims to focus on co-teachers; perceptions of:

1. co-teaching as an educational programme
2. their preparation for collaborative teaching
3. their co-teaching practices
2. terms of co-teachers' roles/tasks and each other's roles
3. collaboration between teachers
4. the problems, challenges and factors facilitating co-teaching
4. the academic and social outcomes of co-teaching
5. Suggestions for a change

Also, this project aims to focus on disabled children's perceptions of:

1. preferences of co-teaching
2. social and academic outcomes of co-teaching
3. experiencing co-teaching and its arrangements
4. co-teaching special teacher

Thus, the above objectives will be addressed by the following research questions:

1. How is co-teaching implemented in secondary education classrooms and why?
2. What are teachers' and students' perceptions with regard to co-teaching?

This research will follow a mixed design methodology. The adoption of this methodology could provide answers to the research questions in this way. Answers to both general research questions will be based on a survey (quantitative approach) and case study methodology (qualitative approach). The qualitative approach aims to gain a deeper understanding of the implementation of co-teaching in Greek schools while the quantitative approach aims to expand our understandings to a wider sample of teachers aiming to gain a richer picture of the implementation of co-teaching and teachers' perceptions.

2. Give details of the participants in this research (giving ages of any children and/or young people involved):

Initially, an on-line questionnaire will be used to survey teachers' beliefs and attitudes to co-teaching. Due to the fact that co-teaching is not a widespread inclusion model in Greece, teachers located across all areas in Greece will have the opportunity to respond to this survey. Furthermore, the on-line questionnaire will enhance even more the objectivity of the research.

Special and general education teachers from secondary schools will be involved in this survey. Specifically, this questionnaire will be sent to every secondary school that implements co-teaching with the following process. The educational direction offices in every area will be contacted and informed by me about the survey aims. Afterwards, through these offices the questionnaire will be sent to schools where co-teaching classes are operated. These offices are responsible for allocating special teachers to co-teaching classrooms and hence they are aware of the schools that implement co-teaching. Directors in each school will contact and inform co-teachers about the survey. Co-teachers-both special and general education -will voluntarily respond to this questionnaire. An adequate response number would be 200 special and general education teachers. Possible follow-up data collection may be necessary.

In the second phase qualitative data will be collected through case-studies. There will be 8 case studies to be conducted in 8 co-teaching classrooms. The sampling of the case study participants will be opportunistic. Given that co-teaching is not a widespread inclusion model, co-teaching classrooms that are close to where I live and work will be selected. After gaining approval from head teachers, secondary co-teachers (special and general teachers of every specialism) will be contacted and invited by me to take part in observations (1-2 teaching hours for each co-teaching pair) and interview process. Only after gaining approval from all teachers as well as children's parents and children themselves the observations and interviews with teachers and disabled children will be conducted. The age of students will be from 12- 19 years old. Interviews with teachers and students will be conducted at schools, after the conduction of observations.

Give details (with special reference to any children or those with special needs) regarding the ethical issues of:

Issues regarding respect, confidentiality, informed consent, safe-guarding will be carefully considered as detailed below.

Respect: The views of children and teachers will be paramount in this study. I will ensure that these are listened to, respected, represented and acted upon. I will also endeavour to respect individual, cultural and role differences, including those involving age, disability, education, ethnicity, gender, language, national origin, race, religion, sexual orientation, marital or family status and socio-economic status. Overall the participants will be treated with respect and surely with no intention to mislead.

Anonymity and Confidentiality: Questionnaires will be sent to and returned by the teachers on-line in an attempt to ensure confidentiality. Records of the data collected (including transcripts and any audio recordings) will be stored in a secure and safe place. Electronic information will only be accessed by supervisors or me with our username and password. This information will be stored on a secure system with recognised virus protection. Electronic and paper information will be locked in a secure place. Information will also be coded to ensure anonymity. Also, this will remain anonymous in the write up of the research. Collected written information will be destroyed by shredding and securely disposed when it is no longer required. Any audio recording will also be disposed of digitally.

Information Leaflet and Informed Consent:

Phase 1

An "informed consent form" -at the start of the questionnaire (See attached document) - will be provided to all participants. This will clarify the aims of my study and by explaining to them the research aims it could be understood that:

- their participation is voluntary
- the identity of the participant will be anonymous and the name of the school or information about the school they are working will not be asked
- No one would see their responses except me, as a researcher
- all information would be confidential and would only be used for the research aims

Phase 2

Furthermore I will obtain informed consent form from co-teacher participants in the Phase 2 (case studies) in order to ensure that they are aware of what their participation involves (see attached document).

In addition, an information leaflet will be distributed to all children's parents who are involved in a co-teaching classroom (see attached file).

Furthermore, it will be very important to obtain a passive informed consent from disabled pupil's parents included in a co-teaching classroom (see attached document) as their this child will be observed and with that child an interview will be conducted in Phase 2 (case studies).

Last by not least, an informed consent form from children with special educational needs will be obtained (see attached document) in order to gain their own permission as well.

Particularly, the participants of my study will be informed about the following:

- The research procedure aims and purposes.
- Everybody has the right to refuse participation.
- Both the identity of the participant and the name of the school will be anonymous.
- Essentially, informed consent will be an ongoing process throughout the research
- Participants will be reminded that they have the right to withdraw from the research at any given time and that data related to them will be destroyed.
- Assurances will be given that the design, the methods, the analysis of the data, the presentation and the conclusions of this research will be presented with fairness

Records of when, how and from whom consent was obtained, will be recorded. Participants will also be made aware of how the research findings will be used.

Safe guarding: It will be made clear to participants that in the exceptional event that there is evidence to raise serious concern about the safety of participants or other people, information will be passed on to relevant bodies.

4. Give details of the methods to be used for data collection and analysis and how you would ensure they do not cause any harm, detriment or unreasonable stress:

Data collection

Aiming to provide data to the research aims and questions, two independent sequential research phases will occur. At the first stage, a survey will be conducted and at a second multiple case studies. In terms of the *mixed design* purpose, multiple case studies (the qualitative approach) aims to gain a richer picture of the implementation of co-teaching by investigating teachers' and students' actions/behaviour as well as perceptions.

Phase 1: Questionnaire

Quantitative: A quantitative measure using an on-line questionnaire will be used to sample the views of special and general education co-teachers. This questionnaire will involve ratings scales, given options. It will also gather demographic information regarding age, specialism professional experience,

experience in co-teaching, and academic preparation for teaching children with SEN. The questionnaire will give to a large number of teachers the opportunity to express their point of view, allowing me to make comparisons between the two groups of teachers and possible generalizations as well. Also, given that the data will be analysed carefully, this method will enhance the objectivity of the research (Punch, 2005). Furthermore, the on-line questionnaire will secure the anonymity of the participants.

Phase 2: Multiple case studies

At the second phase qualitative data will be collected through 8 case studies for 1-2 days each.

Data collection for this phase will be qualitative

- *Semi-structured observations to teachers and students:* In particular, it is participant/ naturalistic semi-structured observations will be conducted. Through these observations, data will be collected in terms of the way co-teachers implement co-teaching, their interaction with children and disabled children's behaviour and interaction with co-teachers under routine rhythms and every day circumstances. Observations will enhance the objectivity of the research because I will investigate practices and behaviours directly and based on facts and not on participants' responses and perceptions.
- *Semi-structured interviews with teachers and students:* Specifically, semi-structured interviews will be conducted because this type of interview will allow me to cover specific issues and will allow me to gain an in-depth understanding of participants' beliefs. These interviews will be face to face and individual with each of the co-teacher, because this type of interview helps interviewees to express more honestly and clearly their feelings and perceptions (i.e. with regard to co-teachers' collaboration with each other).

Data analysis

Phase 1 (Survey):

To access and analyse the quantitative data SPSS 15 for Windows will be used. The questionnaire will be analysed using descriptive statistics. Specifically, tables with frequency counts, percentages, means and standard deviation scores will be provided, aiming to analyse the content of the questionnaire and to present the findings of the quantitative research. Also, statistical tests will be conducted such as ANOVA test, t-test and correlation test in order to identify differences in responses on teacher's sub groups and across their demographic characteristics. Comparison between the sub-groups of teachers will be made aiming for a more in-depth analysis.

Phase 2 (Case studies):

Observations

To analyze the observations data, qualitative analysis will be conducted. Namely, at a first stage, using the method of coding, patterns, regularities and contrasts will be searched aiming to provide labels" of the units of the data. Also, the various codes will be gathered to combine patterns and develop

abstract concepts leading to a more advanced coding in order to reduce and further analyse the data.

Interviews

In terms of the interview data analysis, initially, the interview responses of the participants will be translated and transcribed. In an attempt to reduce the data of each interview, specific responses will be selected, segmented, collated and categorised into units. At this stage, using the method of coding, patterns, regularities and contrasts will be searched aiming to provide labels" in the units of the data. Tables for each participant presenting codes will be used, aiming to systematise my analysis. At a later stage, using a diagram, the various codes will be gathered to combine patterns and develop abstract concepts leading to a more advanced coding in order to generate themes in coherence with the research questions of the study. Lastly, between case studies, relations, namely possible similarities and differences will be searched. Patterns, regularities and comparisons will be identified for a more holistic analysis. Relations between observations and interviews' responses will be found within each case study in order to identify possible discrepancies.

5. Give details of any other ethical issues which may arise from this project -

e.g. secure storage of videos/recoded interviews/photos/completed questionnaires

During the data collection, data analysis and write up, data (questionnaires, audio recordings, consultation meeting records, observation records, interview data and individual data) will be securely stored in a locked cabinet in a secure place. As previously mentioned, electronic information will only be accessed by me using a username and password. Electronic information will also be stored on a secure system, within a locked building with recognised virus protection. It will be destroyed when it is no longer required.

Questionnaires

Ethical considerations regarding the questions of the questionnaire will be taken into account. Particularly, personal questions will be avoided or any that may make them feel uncomfortable, pressed or annoyed

Case studies

Each school will be visited and consent will be gained from the head teachers, after being informed about the research aims. At the second stage, co-teachers employed in the above schools will be contacted by me and asked to participate in the study. In parallel, information sheets will be given to teachers, children and parents in which the research procedure, aims and purposes were explained. Also, consent forms will be sent to disabled children's parents to gather their permission in order their children to be participated in my research. It will be stressed that everyone had the right to refuse participation. Also, it will be emphasized that the participants would be anonymous and the data would be presented in a way that does not allow any person or school to be identified. Lastly, assurances will be given that the data would be analysed reliably and the findings of this research will be presented with fairness.

In terms of the observations, I will become familiar with the students in the class and the teachers so that my presence inside a classroom is not a barrier for teachers to conduct their lesson. My research will seek for participants who

honestly want to take part in the study in order to obtain essential findings. Hence, nobody will be pressed to take part in observations.

In terms of the interview questions to teachers and students, a serious attempt will be made to avoid the interview questions being personal and not to harm the participants, or make them feel uncomfortable, pressed or annoyed. Assurances will be given that the interview participants (teachers and students) will be anonymous. Lastly, due to the fact the interviews will be recorded, the participants will be informed that only myself would hear the recordings and that parts of the interview may be presented in the thesis.

6. Special arrangements made for participants with special needs etc.

This is a particularly sensitive area of research and therefore informed consent and right to withdraw must be strictly adhered to. It is also the responsibility of all those involved in the research to raise concerns about any of the participants, particularly in Phase Two where the well-being of these groups is of paramount importance. Parents of this cohort must be fully informed and be offered clear channels of communication to me (researcher) throughout the case study period.

Interviews with disabled children will be conducted with the presence of their parent or another teacher without pressing any of children to take part. Specifically, with regard to students' interview questions a serious attempt will be made so as the language used being appropriate for the age and literacy level of students taking into account the severity of their special educational needs.

7. Give details of any exceptional factors, which may raise ethical issues (e.g. potential political or ideological conflicts which may pose danger or harm to participants):

Aiming to enhance the reliability of the study, a detailed description of the observation circumstances and children's characteristics will be made, in order to avoid making uncertain interpretations of the findings. Moreover, teachers will be asked not to change the typical way that they deliver instruction aiming to enhance the validity of the observations. Also, many observations will be implemented aiming to enhance the reliability of the findings.

In general, aiming to enhance the objectivity of the research the data collection and analysis will be conducted in a reliable way and with no intention to change any information. The findings will be presented accurately and interpretations of the findings will be made carefully, having in mind the limitations of the study.

This form should now be printed out, signed by you on the first page and sent to your supervisor to sign. Your supervisor will forward this document to the School's Research Support Office for the Chair of the School's Ethics Committee to countersign. A unique approval reference will be added and this certificate will be returned to you to be included at the back of your dissertation/thesis.

N.B. You should not start the fieldwork part of the project until you have the signature of your supervisor

This project has been approved for the period: April 2015 **until:** Sept 2017
By (above mentioned supervisor's signature):

.....**date:**.....30/3/2015.....

N.B. To Supervisor: Please ensure that ethical issues are addressed annually in your report and if any changes in the research occur a further form is completed.

GSE unique approval reference:.....

Signed:.....**date:**.....

Chair of the School's Ethics Committee

Appendix 5

Information and consent form for questionnaires

I would appreciate your assistance with this research project which aims to examine general and special co-teachers' perceptions with regard to the implementation of *co-teaching* in mainstream secondary education schools. My intention is to conduct a small scale research which is part of my PhD thesis in Special Educational Needs at Exeter University in the UK. This research will help me to collect data in terms of the *co-teaching* inclusion model, aiming to positively contribute to the knowledge of how pupils could be effectively included in Greek mainstream schools.

All you need to do is complete this short questionnaire, which should take approximately 10 minutes. If you do not wish to participate, simply discard the questionnaire. Responses will be completely anonymous; your name or the name of the school will not appear anywhere on the survey. Completing the questionnaire constitutes your consent to participate.

Keep this letter for your records. If you have any questions regarding the research, please do not hesitate to get in touch with me by e-mail (px206@exeter.ac.uk) or phone (our child's privacy and the confidentiality of his/her data will be protected) if you have any inquiries.

Researcher Pinelopi Xanthopoulou

PhD in Special Educational Needs, at University of Exeter

Supervisors: Dr. Brahm Norwich - University of Exeter
Dr. Jane Seale- University of Exeter

Thank you again for your help!

Appendix 6

Figure taken from Wilson's (2005) paper

How can I determine if a co-taught collaborative inclusion class is being taught as effectively as possible?

Questions I should be asking myself as I observe . . .

I. The Basics: Meaningful Roles for Each Teacher

1. Can the role of each teacher be defined at any given point in the lesson?
2. Is each role meaningful? Does each role enhance the learning process?
3. Do the teachers vary their roles during the course of the lesson?
4. Is each teacher well suited to the role(s) he or she is assuming?
5. Are both teachers comfortable with process AND content?
6. Is the special education teacher working with all students?

II. Strategies to Promote Success for ALL Students

1. What evidence is there that teachers engaged in co-planning the lesson?
2. Are the teachers focusing on process as well as content? Are they reinforcing important skills?
3. Are directions clear?
4. What strategies/modifications are being employed to assist struggling students?
5. What adaptations were made to materials in order to help struggling students complete tasks?
6. What strategies are being used to actively engage students?
7. How are students being grouped? Does it fit the task? Is it purposeful?
8. What reinforcement strategies are being employed?

III. Evidence of Success

1. Are struggling students answering/asking questions?
2. Are students engaged in meaningful work throughout the period?
3. How are teachers assessing the learning of each student?
4. What evidence is there that all students have been appropriately challenged?

Figure 1. The co-teaching observation guide.

Appendix 7
Observation schedule

No of School:	Special teacher:	General teacher:	Date:
Class: No of students: No of students with SEN: Duration of lesson time:	No of Lesson: Subject:		
GE and SE Teacher's actions/roles	Field notes		
Teaching Mediating student learning /moderate student activity Managing behaviour Assessment Working with all children/one child Leading role Supportive role Observatory role Participatory role			
Teachers' Strategies/practices to include children with SEN	Field notes		
Co-planning Differentiation (content, material adaptation, assessment) Grouping Ensure participation/peer interaction Flexible curriculum Use of technology Summation Connections to student's experience Reinforcement of previously learned and new Material Understanding and clarification Motivation			
Description of disabled student's behaviour, engagement, type of engagement, student-teacher interactions	Field notes		
With which one teacher			

<p>are working/interacting (Individual attention by one teacher/both teachers)</p> <p>How do they work (within group/class/in pairs)</p> <p>What kind of activities (apply the information, adapted/differentiated, meaningful work)</p> <p>Asking questions (raise his/her hand to volunteer, was the student called on by the teacher without raising his/her hand)</p> <p>Type of academic engagement (recalling prior knowledge, talking about or using a strategic skill, clarifying/elaborating on content)</p> <p>Unswerving questions (incorrect, partially correct, totally correct)</p>	
---	--

Teachers' roles	General teacher	Tick	Special teacher	Tick
	•Presenting Content		•Presenting Content	
	•Mediating student learning		•Mediating student learning	
	•Monitoring student learning		•Monitoring student learning	
	•Facilitating transitions		•Facilitating transitions	
	•Moderating student activity		•Moderating student activity	
	•Circulating		•Circulating	
	•Managing behaviour		•Managing behaviour	
	•Individualizing instruction		•Individualizing instruction	
	•Assess pupils' learning		•Assess pupils' learning	
Teacher's actions in relation to students ;grouping	General teacher		Special teacher	
	• with a group of students		• with a group of students	
	• with one student		• with one student	
	• with all children		• with all children	
	• with student with SEN		• with student with SEN	
Lesson content	Both teachers teach the same content segments			
	Both teachers teach different content segments			

Appendix 8

Interview questions for teachers

1. Perceptions of co-teaching and their roles

i.e. *How do they define co-teaching (aim, roles, characteristics)?*

What is your role in co-teaching? Partner's role?

What are your major responsibilities in educating Students in your co-taught classroom?

2. Perceptions of their preparation for co-teaching

i.e. What kind of preparation do they have?

Is it sufficient?

What are their suggestions?

3. Practices

How do they support children with or without SEN?

What practices do they employ to support disabled children or not and how do they explain them?

Which of them are more efficient?

Discuss the modifications in content and instructional delivery made in co-teaching class to support disabled/all children

4. Perceptions of collaboration between teachers

How many hours do you spend co-planning with your co-teacher?

What are their perceptions towards the collaboration between them?

How do they support each other? How do they /organize the lesson?

What factors influence their collaboration?

5. Perceptions of the academic and social outcomes of co-teaching to disabled children

i.e. *Do they believe that co-teaching has positive or negative social and academic outcomes for disabled children or for all children?*

Advantages/ Disadvantages to children?

Do they believe that co-teaching is more efficient in some categories of SEN?

6. Problems

What kind of problems/barriers/challenges did you face during your experience?

7. Suggestions for a change

i.e. *What are teachers' suggestions for improving co-teaching? Or for improving children's learning support?*

What would facilitate the implementation of co-teaching?

What factors (personal, social, professional) do they believe will improve co-teaching?

What is their point of view regarding the implementation of co-teaching?

What are their expectations about co-teaching?

Appendix 9

Interview questions for students

Warming up-questions

Please can you describe the teaching situation you experience? How do you make sense/perceive that you are having two teachers within classroom?
Do you think that you need support?

1. Preferences

i.e. *Do they prefer having a special education teacher (name of the teacher) into classroom or not?*

Do they prefer to get help by the special or general teacher?

Do you feel comfortable going for extra help with either of the teachers?

Do you like being taught in a class with two teachers?

Would you choose a class with two teachers next year? Or would you like to be taught individually in a separate classroom? Or in a separate classroom with other students/group of students?

2. Perceptions towards social and academic outcomes of co-teaching

i.e. *Do they believe that their grades are improved into classroom where there are two teachers (academic outcomes)?*

Do you learn more in your classroom having two teachers (academic outcomes)?

Do you get more help in a classroom with two teachers or in a classroom with one teacher (academic outcomes)?

Are you learning new ways to help you do your work (academic outcomes)?

Do they believe that you make more friends in co-teaching classroom (social outcomes)?

Do you get more help from your friends within your co-teaching classroom (social outcomes)?

Do you think your behaviour is better when you have two teachers within classroom (behavioural outcomes)?

3. Perceptions towards co-teaching

i.e. *What do you think are the benefits of being taught by two teachers? Or what do you like more in a classroom where there are two teachers?*

What do you think are the drawbacks of being taught by two teachers? Or what do you dislike more in a classroom where there are two teachers?

4. Perceptions towards special teacher

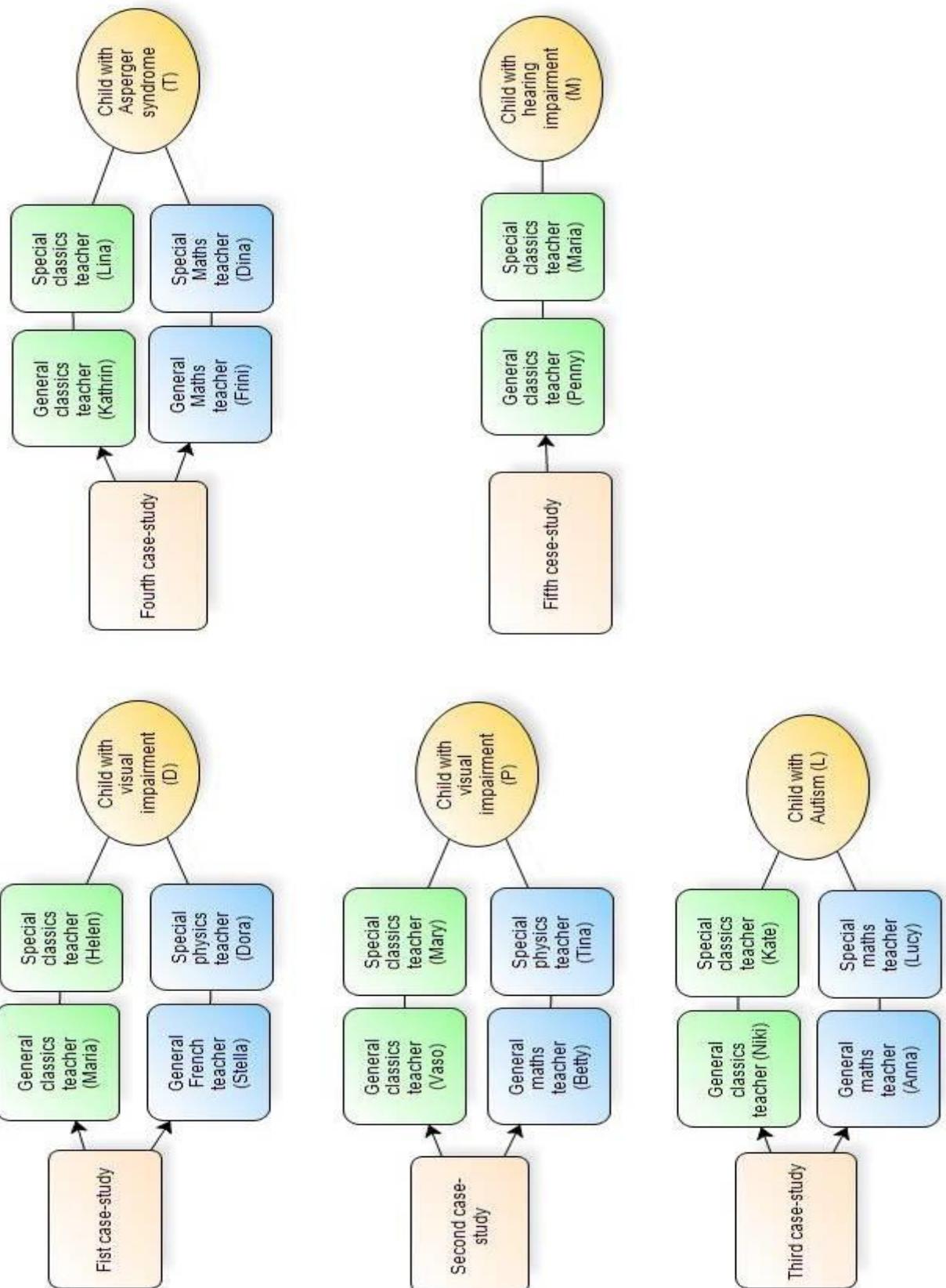
Does the special teacher improve/enhance their learning: Does the special teacher help you with school activities, assignments?

Do they believe that special teachers responsible only for children with SEN?

Do you believe that the special teacher should help only you?

Do you receive more attention/help from the special teacher (name)?

Appendix 10



Appendix 11

Approval Date:
Expires:

Permission for Teachers Participation in Research

Title: Co-teaching in mainstream secondary schools: The implementation of co-teaching in mainstream secondary schools. Special and general education teachers' and disabled children's perceptions of co-teaching

Dear Teacher,

I am writing to you about this project to invite you to participate. Please, read the information below and ask any questions you might have before deciding whether or not to take part. If you decide to be involved in this study, please complete the form below.

Purpose of the Study

This research aims to examine how co-teaching is implemented by general and special co-teachers in secondary education schools. It also, this study aims to investigate general and special co-teachers' perceptions about co-teaching.

I intend to gather data through observing special and general teachers co-teaching in mainstream secondary schools. I will also interview pairs of co-teachers who co-teach in a mainstream classroom.

My aim is to gain a better understanding of the *co-teaching* inclusion model, in order to contribute to the knowledge of how pupils with special educational needs could be effectively included in Greek mainstream schools

Your participation will be very helpful as well significant and your contribution to this study will be greatly appreciated. Furthermore, I would be grateful if you could allow me to conduct some observations during lesson time and if you dedicate some of your time for the interview process. The interview is going to last for approximately 20 minutes and it will be recorded by audio recording for the aim of my research.

Title of the project:	Co-teaching in mainstream secondary schools: The implementation of co-teaching in mainstream secondary schools. Special and general education teachers' and disabled children's perceptions of co-teaching
Supervisors:	Dr. Brahm Norwich - University of Exeter Dr. Jane Seale- University of Exeter
Researcher:	Pinelopi Xanthopoulou, PhD in Special Educational Needs, University of Exeter

Your involvement in the study

If you participate in this study, during observations you will be just asked to do what you do typically every day. This research study will take place during regular classroom activities and the maximum duration of this study will be 2-4 teaching hours in total. During observations, you will not be audio/video recorded. I am going just taking some notes during lesson time.

Also, you will be asked to take part in an interview. This interview will take place within school and outside lesson time. The duration of the interview process will be approximately 20 minutes and during interview process you will be audio recorded. The interviews' questions will be focused on your perceptions of:

1. co-teaching as a teaching approach and inclusion model
2. preparation for collaborative teaching
3. co-teaching practices
2. co-teachers' roles/tasks and each other's roles
3. collaboration between teachers
4. the problems, challenges and factors facilitating co-teaching
4. the academic and social outcomes of co-teaching
5. Suggestions for a change

Do I have to participate?

No, your participation in this study is voluntary. You may decline to participate or to withdraw from participation at any time. You can agree to participate in the study now and change your mind later without any penalty.

How will your privacy and confidentiality be protected you participates in this research study?

Your privacy and the confidentiality will be protected. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Your identity will be kept confidential by not referring to your name, the school name or location. Information will not be released to any other, for any reason.

If you choose to participate in this study, you will be audio recorded. Any audio recording will be stored securely and only the researcher will have access to the recordings. Recordings will be kept for completing my thesis and then erased.

Whom to contact with questions about the study?

Prior, during or after your participation you can contact the researcher **Pinelopi Xanthopoulou** at **0030 6934879177** or send an email to **pinelopi.xanthopoulou@gmail.com** for any questions or if you feel that you have been harmed.

Signature

You are making a decision about whether or not to participate in this study. Your signature below indicates that you have read the information provided above and have decided to participate in the study. You will be given a copy of this document.

I understand that:

- ✓ There is no compulsion for me to participate in this research project and, if I do choose to participate, I may at any stage withdraw my participation and may also request that my data be destroyed
- ✓ I have the right to refuse permission for the publication of any information about me
- ✓ Any information which I give will be used solely for the purposes of this research project, which may include publications or academic conference or seminar presentations
- ✓ If applicable, the information, which I give, may be shared between any of the other researcher(s) participating in this project in an anonymised form
- ✓ All information I give will be treated as confidential
- ✓ The researcher will make every effort to preserve my anonymity

Please, tick:

- I agree to be observed
 I agree to be interviewed
 I CAN be **audio** recorded.
 I CAN NOT be **audio** recorded.

Printed Name

Signature of Teacher

Date

Signature of Investigator

Date

Appendix 12

Approval Date: Expires:

Parental Permission for Children with SEN Participation in Research

Title: Co-teaching in mainstream secondary schools: The implementation of co-teaching in mainstream secondary schools. Special and general education teachers' and disabled children's perceptions of co-teaching

Dear Parents,

The purpose of this form is to explain this study and to invite you as a parent of a child to agree to your child's participation in the study. I explain below the purpose of my research and to describe what your child's potential involvement would be. Please read the information below and ask any questions you might have before deciding whether or not to give your permission for your child to take part. If you decide to let your child be involved in this study, this form will be used to record your permission.

Purpose of the Study

If you agree, your child will be asked to participate in a research study about *Co-teaching*. Specifically, this research aims to gather data and examine how co-teaching is implemented by general and special co-teachers in secondary education schools and how pupils with disabilities interact with their teachers in a co-teaching classroom. Also, this study aims to investigate disabled pupil's perceptions about co-teaching.

I intend to gather data through observing special and general teachers co-teaching in a mainstream secondary schools as well as observing how children with SEN interact with their teachers. Also, I intent to interview pupils with SEN who are included in mainstream classrooms.

My aim is to gain a better understanding of the *co-teaching* inclusion model, aiming to positively contribute to the knowledge of how pupils with special educational needs could be effectively included in Greek mainstream schools.

Thus, allowing your child to participate in this study will be very and will be greatly appreciated.

Title of the project:	Co-teaching in mainstream secondary schools: The implementation of co-teaching in mainstream secondary schools. Special and general education teachers' and disabled children's perceptions of co-teaching
Supervisors:	Dr. Brahm Norwich - University of Exeter Dr. Jane Seale- University of Exeter
Researcher:	Pinelopi Xanthopoulou, PhD in Special Educational Needs, University of Exeter

What is my child going to be asked to do?

During observations your child will do what typically do with their teachers as this research study will take place during regular classroom activities. The maximum duration of this study will be 6 teaching hours in total. During observations, your child will not be audio/video recorded. I am going just taking some notes during lesson time.

Also, your child will be asked to take part in an interview. This interview will take place within school in a classroom and after the lessons. The duration of the interview process will be 10 minutes and during interview process your child will/may be audio recorded. The interviews' questions will be focused on their perceptions of:

1. preferences of *co-teaching*
2. social and academic outcomes of co-teaching
3. experiencing *co-teaching* and its arrangements
4. special co-teacher

What are the risks involved in this study?

There are no foreseeable risks to participating in this study.

What are the possible benefits of this study?

We will gain a better understanding of the *co-teaching* inclusion model, aiming to positively contribute to the knowledge of how pupils could be effectively included in Greek mainstream schools. This may benefit how your child is taught.

Does my child have to participate?

No, your child's participation in this study is voluntary. Your child may decline to participate or to withdraw from participation at any time. Withdrawal or refusing to participate will not affect their relationship with their teachers. You can agree to allow your child to be in the study now and change your mind later without any penalty. However, if you do not want your child to participate, he/she could be withdrawn out of class and do his/her homework in another classroom.

What if my child does not want to participate?

In addition to your permission, your child must agree to participate in the study. If your child does not want to participate they will not be included in the study and there will be no penalty. If your child initially agrees to be in the study they can change their mind later without any penalty.

How will your child's privacy and confidentiality be protected if s/he participates in this research study?

Your child's privacy and the confidentiality of his/her data will be protected. Any information that is obtained in connection with this study and that can be identified with your child will remain confidential and will be disclosed only with your permission. Subject identities will be kept confidential by not referring their names, name of school or school location. Information will not be released to any other, for any reason.

If you choose to participate in this study, your child will be audio recorded. Any audio recording will be stored securely and only the researcher will have access to the recordings. Recordings will be kept for completing my thesis and then erased.

Whom to contact with questions about the study?

Prior, during or after your participation you can contact the researcher **Pinelopi Xanthopoulou** at **0030 6934879177** or send an email to **pinelopi.xanthopoulou@gmail.com** for any questions or if you feel that you have been harmed. Please, let me know if something is not clear so that I can provide the necessary explanations

PLEASE NOTE:

If you **DON'T** want your child to participate in the study, you need to contact me by _____

NOT CONTACTING ME indicates that you have read and understand the information provided above, that you willingly agree to allow your child to participate, that you and/or your child may withdraw your consent at any time and discontinue participation without penalty.

Appendix 13

I am willing to take part in the study called "Co-teaching in mainstream secondary schools: The implementation of co-teaching in mainstream secondary schools. Special and general education teachers' and disabled children's perceptions of co-teaching".

I understand that the researcher from Exeter University is hoping to understand how the two teachers teach at the same time in a classroom and what I think and feel about this situation.

I understand that the researcher will come to my classroom to see how the teaching is done and what I am doing when I have two teachers.

I understand that I will do exactly what I typically do in lessons while the researcher will take some notes.

Also, I understand the researcher will ask me some questions after the lesson and she will record my voice using a microphone.

I will be asked these questions in my school after the end of my lessons and it should take about 10 minutes of my time.

I am taking part because I want to. I have been told that I can stop at any time, and if I do not like a question, I do not have to answer it. No one will know my answers, including my teachers and other children.

For the above reasons:

I want the researcher to come to my classroom to see what I am doing Yes / No

I want to have a discussion with the researcher and to give her my opinion Yes / No

Name _____ Age: _____

Signature _____ Date: _____

Appendix 14

Information leaflet for children's parents

Title: Co-teaching in mainstream secondary schools: The implementation of co-teaching in mainstream secondary schools. Special and general education teachers' and disabled children's perceptions of co-teaching

Dear parents,

My name is Pinelopi Xanthopoulou and I am a special secondary teacher. In the framework of my PhD studies in Special Educational Needs at Exeter University, I am going to conduct research focusing on *co-teaching* classrooms. Specifically, this research aims to gather data and examine the way *co-teaching* is implemented by general and special *co-teachers* in secondary education schools. *Co-teaching* is the collaboration between a general and a special educational teacher with an aim to provide effective instruction to all children regardless their needs and abilities. My aim is to observe special and general teachers co-teaching in mainstream secondary schools. My ambition is to gain a better understanding of the *co-teaching* inclusion model, aiming to positively contribute to the knowledge of how pupils with special educational needs could be effectively included in Greek mainstream schools.

Thus, the mainstream classroom in which your child is participating was selected by me in order to conduct my research. The main criterion for this selection is that within your child' mainstream classroom *co-teaching* is implemented.

Title of the project:	Co-teaching in mainstream secondary schools: The implementation of co-teaching in mainstream secondary schools. Special and general education teachers' and disabled children's perceptions of co-teaching
Supervisors:	Dr. Brahm Norwich - University of Exeter Dr. Jane Seale- University of Exeter
Researcher:	Pinelopi Xanthopoulou, PhD in Special Educational Needs, University of Exeter

What my child is going to be asked to do

Actually, your child will not be asked to do anything that is out of the ordinary. Your child will be within the class and do what exactly what he/she is doing every day with their teachers. This research study will take place during regular classroom activities. The maximum duration of this study will be 6 teaching hours in total.

Please note: Your child will not be observed. Also your child will not be audio/video recorded. I am going to take some notes during lesson time. Also, your child does not need to be withdrawn from his/her classroom, as nothing will be changed during lesson time and your child will do exactly as he/she doing at regular basis.

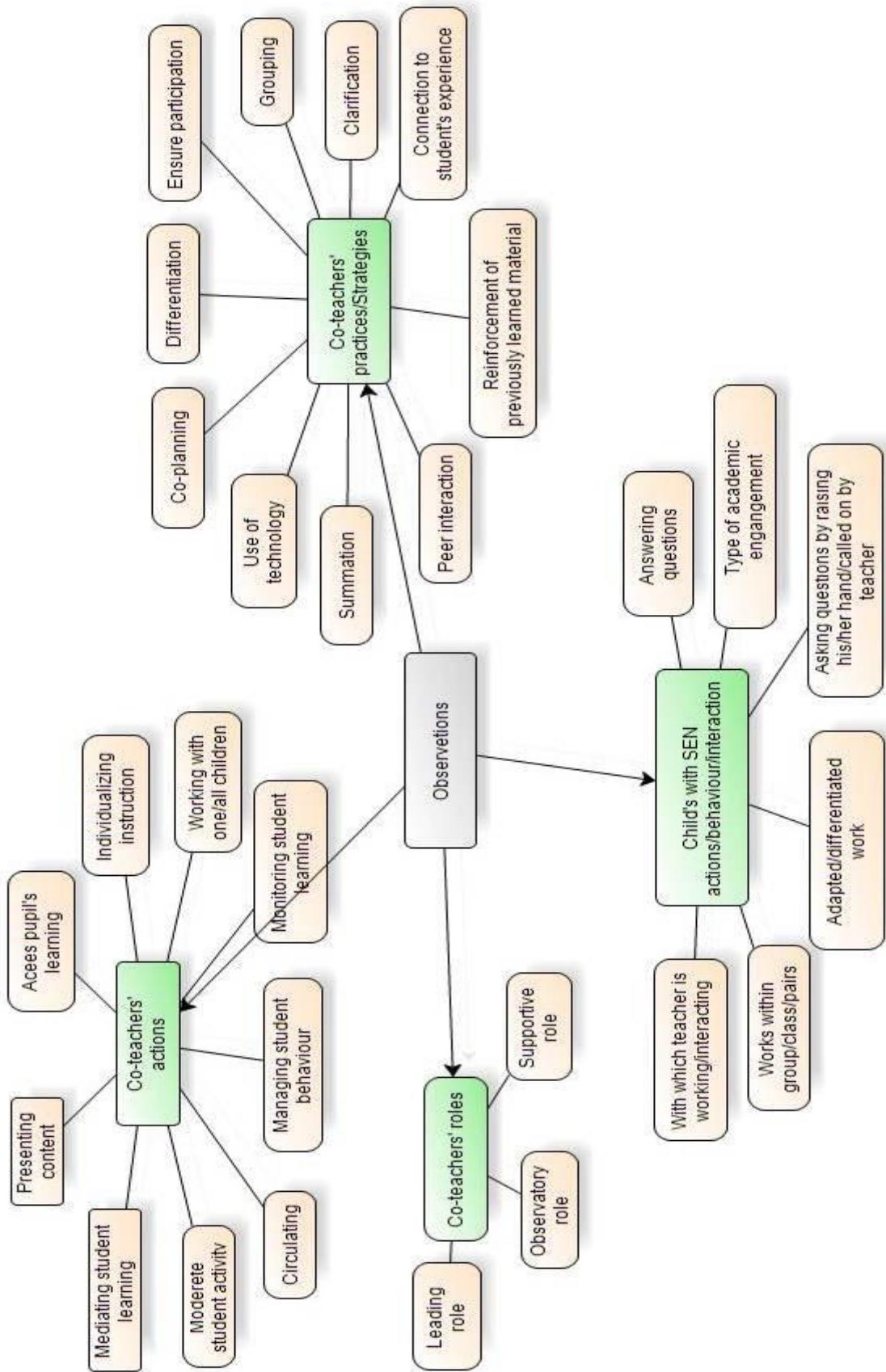
Also, your child's participation in this study is voluntary. Your child may decline to participate or to withdraw from participation at any time. Withdrawal or refusing to participate will not affect their relationship with their teachers. You can agree to allow your child to be in the study now and change your mind later without any penalty. However, if you do not want your child to participate, he/she could be withdrawn out of class and do his/her homework in another classroom.

Moreover, have in mind that your child's privacy and the confidentiality will be protected. Anonymity will be secured and any information given will be treated under the scope of ethical codes.

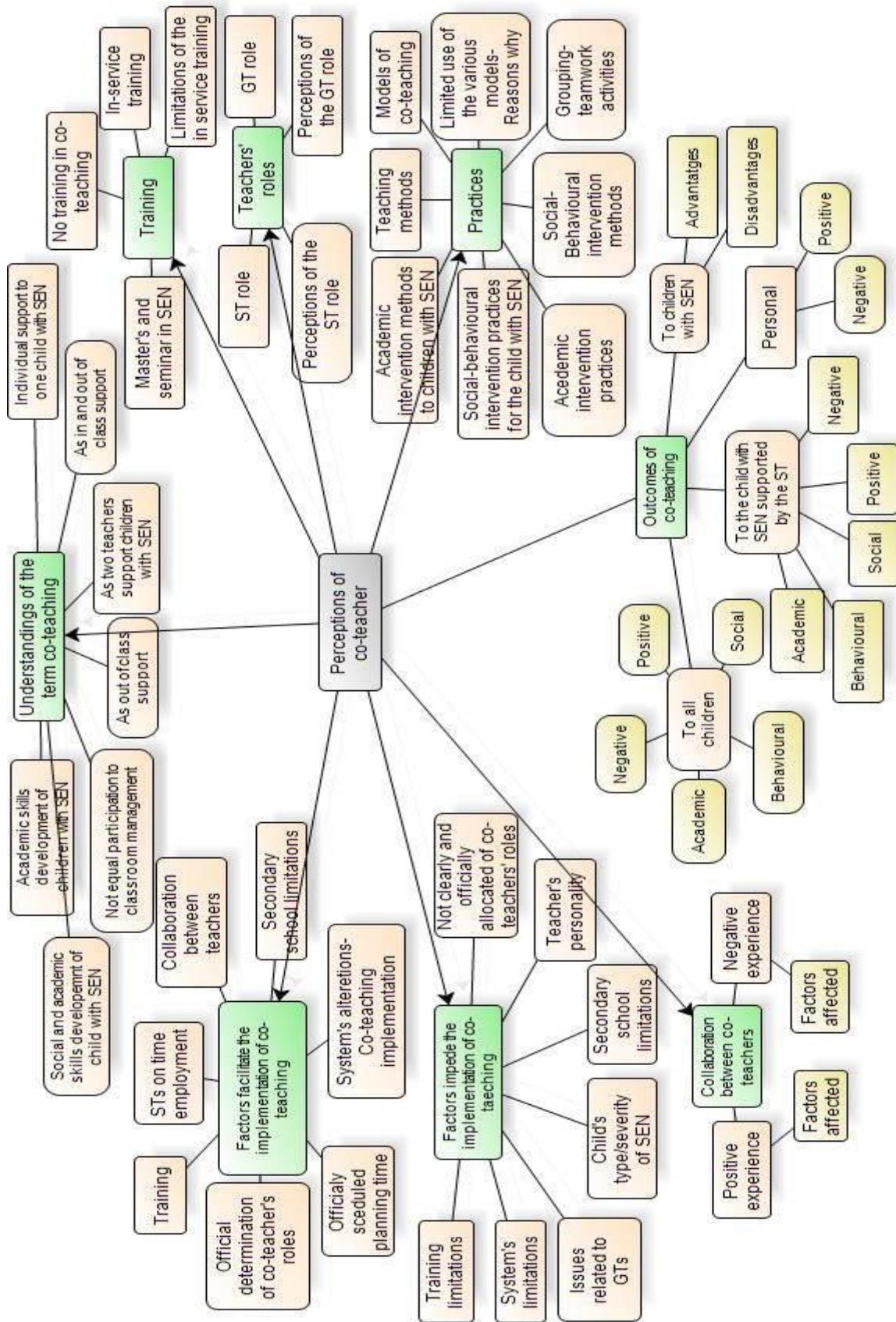
Please, let me know if something is not clear so that I can provide the necessary explanations. Prior, during or after the research you can contact me (**Pinelopi Xanthopoulou**) at **0030 6934879177** or send an email to **pinelopi.xanthopoulou@gmail.com** for any questions or if you feel that you have been harmed.

Yours sincerely,
Pinelopi Xanthopoulou

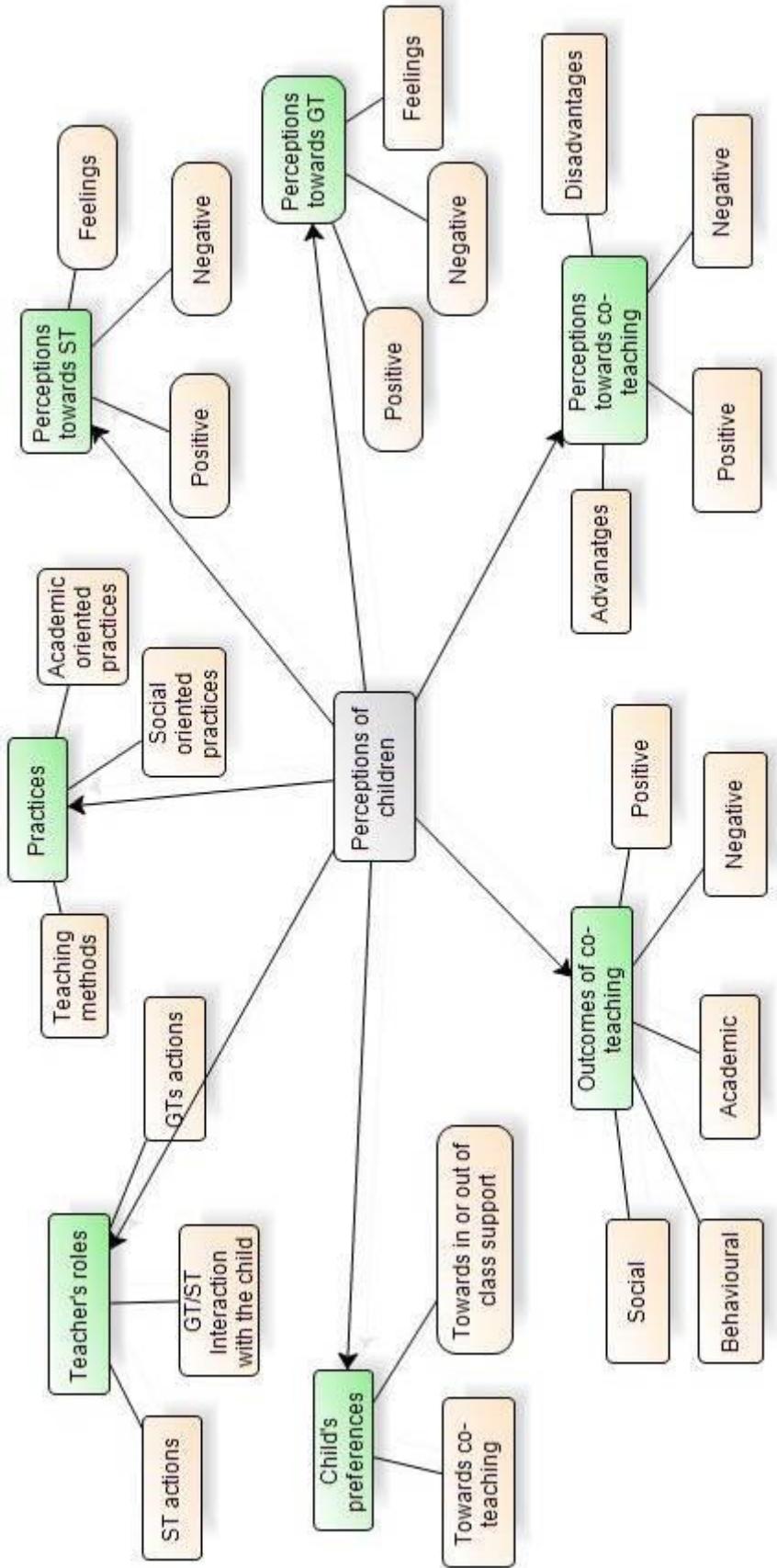
Appendix 15



Appendix 16



Appendix 17



Appendix 18

Demographic information

		Number		
Number of Teachers:	GT	52 (37.1%)		
	ST	88 (62.9%)		
	Tot.	140 (100%)		
Gender		Female	Male	
	GT	39 (75%)	13 (25%)	
	ST	71 (80.7%)	17 (19.3%)	
Age	Tot.	110 (78.6%)	30 (21.4%)	
		Minimum	Maximum	
	GT	29	56	44.596/6.838
Years of professional experience	ST	23	58	32.897/5.645
	Tot.	23	58	37.243/ 8.323
		Minimum	Maximum	Means/sd
Years of co-teaching experience	GT	1	28	14.539/7.668
	ST	0	29	4.341/4.508
	Tot.	0	29	8.129/ 7.665
Number of children identified as having SEN		Minimum	Maximum	Means/sd
	GT	1	13	2.173/1.876
	ST	0	9	2.329/1.868
Number of children that are identified as needing co-teaching	Tot.	0	13	2.271/1.865
		Minimum	Maximum	Means/sd
	GT	1	2	1.077/0.269
Total number of co-teaching classrooms visited	ST	0	3	1.068/0.332
	Tot.	0	3	1.071/0.309
		Minimum	Maximum	Means/sd
Total number of children supported	ST	0	6	2.447/1.376
		Minimum	Maximum	Means/sd
	ST	0	9	2.593/1.589

Appendix 19

Participants' training in co-teaching and perceptions of it

	Yes 1	No 2	Means /Sd	Chi- square	Low Utility 1	High Utility 2	Means /Sd (L/H)	Means /Sd (Full scale)	Chi- square
5. Attended a lesson/session relevant to co-teaching during undergraduate studies	10 GT (19.2 %)	42 (80.8 %)	1.808 0.398	Chi-square =0.254 Df=1 P value =0.614	9 (17.6%)	43 (82.7 %)	1.827 0.382	3.327 0.809	Chi-square =0.017 Df=1 P value =0.896
	14 ST (15.9%)	74 (74%)	1.840 0.367		16 (18.2%)	72 (81.8 %)	1.818 0.388	3.204 0.819	
	Tot. 24 (17.1%)	116 (82.9%)	1.823 0.378		25 (17.9%)	115 (82.1%)	1.821 0.384	3.250 0.815	
6. Attended a lesson/session relevant to co-teaching during postgraduate studies	GT 10 (19.2 %)	42 (80.8 %)	1.808 0.398	Chi-square =12,20 Df=1 P value =0,000	18 (34.6%)	34 (65.4%)	1.654 0.480	2.750 1.082	Chi-square =0.116 Df=1 P value =0.733
	ST 43 (48.9 %)	45 (51.1%)	1.511 0,503		28 (31.8%)	60 (68.2 %)	1.689 0.468	3.102 0.959	
	Tot. 53 (37.9%)	87 (62.1%)	1.621 0.487		46 (32.9%)	94 (67.1%)	1.671 0.471	2.971 1.012	
7. Student teaching placement in a co-teaching class	GT 14 (26.9 %)	38 (73.1 %)	1.731 0.448	Chi-square =3.228 Df=1 P value =0.072	5 (9.6 %)	47 (90.4 %)	1.904 0.298	3.408 0.671	Chi-square =0.115 Df=1 P value =0.734
	ST 37 (42 %)	51 (58%)	1.579 0.496		7 (8%)	81 (92 %)	1.920 0.272	3.511 0.743	
	Tot. 51 (36.4%)	89 (63.6%)	1.635 0.482		12 (8.6%)	128 (91.4%)	1.914 0.281	3.500 0.715	
4. In service school distinct training courses on co-teaching	GT 13 (25 %)	39 (75 %)	1.750 0.437	Chi-square =48.513 Df=1 P value =0.000	13 (25 %)	39 (75 %)	1.750 0.437	3.154 0.978	Chi-square =2.315 Df=1 P value =0.128
	ST 74 (84.1 %)	14 (15.9 %)	1.159 0.368		33 (37.5%)	55 (62.5 %)	1.625 0.487	2.875 0.944	
	Tot. 87 (62.1 %)	53 (37.9%)	1.379 0.487		46 (32.9%)	94 (67.1%)	1.671 0.471	2.979 0.963	
5. Session/lesson relevant to co-teaching in a training seminar organised by a University	GT 15 (28.8 %)	37 (71.2 %)	1.711 0.457	Chi-square =13.827 Df=1 P value =0.000	11 (21.2%)	41 (78.8%)	1.789 0.412	3.192 0.950	Chi-square =3.083 Df=1 P value =0.079
	ST 54 (61.4 %)	34 (38.6 %)	1.386 0.489		31 (35.2%)	57 (64.8%)	1.648 0.480	2.864 0.937	
	Tot. 69 (49.3%)	71 (50.7%)	1.507 0.501		42 (30%)	98 (70%)	1.700 0.459	2.985 0.951	
8. Session/lesson in a relevant to co-teaching training seminar organised by a private entity/body	GT 14 (26.9 %)	38 (73.1 %)	1.731 0.448	Chi-square =0.036 Df=1 P value =0.850	29 (55.8%)	23 (44.2 %)	1.442 0.501	2.365 1.155	Chi-square =0.000 Df=1 P value =0.992
	ST 25 (28.4 %)	63 (71.6 %)	1.715 0.453		49 (55.7%)	39 (44.3 %)	1.443 0.499	2.398 1.099	
	Tot. 39 (27.9%)	101 (72.1%)	1.721 0.449		78 (55.7%)	62 (44.3%)	1.442 0.498	2.386 1.116	
9. Mentoring by another teacher who has experience or knowledge in co-teaching	GT 25 (48.1%)	27 (51.9 %)	1.519 0.504	Chi-square =0.122 Df=1 P value =0.726	12 (23.1%)	40 (76.9 %)	1.769 0.425	3.115 0.942	Chi-square =0.764 Df=1 P value =0.382
	ST 45 (51.1 %)	43 (48.9 %)	1.489 0.502		15 (17 %)	73 (83%)	1.823 0.378	3.261 0.878	
	Tot. 70 (50%)	70 (50%)	1.500 0.501		27 (19.3%)	113 (80.7%)	1.807 0.396	3.207 0.902	

Appendix 20

Models of co-teaching used by participants and their frequency

	Very often 1	Often 2	Not so often 3	Never 4	Means /Sd	T-Test
1. One teacher leads the teaching while the other observes the behaviour and academic performance of a specific pupil/s <i>(One teach-one observes)</i>	GT 1 (28.8 %) ST 18 (20.5 %) Tot 33 (23.6%)	GT 9 (17.3 %) ST 19 (21.6 %) Tot 28 (20%)	GT 8 (15.4 %) ST 29 (33 %) Tot 37 (26.4%)	GT 20 (38.5 %) ST 22 (25 %) Tot 42 (30%)	2.635 1.268 2.625 1.075 2.629 1.115	T=0.048 Df= 138 P Value = 0.962
2. One of the two teachers takes the teaching role and the other circulates among students in order to provide individual support to them or to one student if necessary. <i>(One teach-one assist)</i>	GT 27 (51.9 %) ST 56 (63.6 %) Tot 83 (59.3%)	GT 14 (26.9 %) ST 16 (18.2 %) Tot 30 (21.4%)	GT 6 (11.5 %) ST 10 (11.4 %) Tot 16 (11.4%)	GT 5 (9.6 %) ST 6 (6.8 %) Tot 11 (7.9%)	1.788 0.997 1.614 0.939 1.679 0.962	T=1.040 Df=138 P Value =0.300
3. Children are separated into two or more groups or learning stations and teachers provide individual support and instruction at each of them <i>(Station teaching)</i>	GT 4 (7.7 %) ST 1 (1.1 %) Tot 5 (3.6%)	GT 4 (7.7 %) ST 11 (12.5 %) Tot 15 (10.7%)	GT 8 (15.4 %) ST 19 (21.6 %) Tot 27 (19.3%)	GT 36 (69.2 %) ST 57 (64.8 %) Tot 93 (66.4%)	3.461 0.938 3.500 0.758 3.486 0.675	T= -0.265 Df=138 P Value =0.791
4. Each teacher delivers either the same or similar teaching to half the class or other classroom groupings <i>(Parallel teaching)</i>	GT 2 (3.8 %) ST 1 (1.1 %) Tot 3 (2.1%)	GT 4 (7.7 %) ST 4 (4.5%) Tot 8 (5.7%)	GT 4 (7.7 %) ST 13 (14.8 %) Tot 17 (12.1%)	GT 42 (80.8 %) ST 70 (79.5 %) Tot 112 (80%)	3.653 0.789 3.727 0.601 3.700 0.675	T= -0.620 Df=138 P Value = 0.536
5. One teacher works with most students while the other works with a small group aiming to enhance the teaching provided by the other co-teacher e.g. remediation, enrichment, assessment, pre-teaching, or another purpose. <i>(Alternative teaching)</i>	GT 2 (3.8 %) ST 6 (6.8 %) Tot 8 (5.7%)	GT 8 (15.4 %) ST 15 (17 %) Tot 23 (16.4%)	GT 7 (13.5 %) ST 20 (22.7 %) Tot 27 (29.3%)	GT 35 (67.3 %) ST 47 (53.4%) Tot 82 (58.6%)	3.442 0.895 3.227 0.968 3.307 0.944	T= 1.306 Df=138 P Value =0.194
6. The two co-teachers equally plan and teach a lesson as well as assessing the learning of all children and having the responsibility of all children. <i>(Team-Teaching)</i>	GT 1 (1.9 %) ST 4 (4.5 %) Tot 5 (3.6%)	GT 2 (3.8 %) ST 4 (4.5 %) Tot 6 (4.3%)	GT 6 (11.5 %) ST 13 (14.8 %) Tot 19 (13.6%)	GT 43 (82.7%) ST 67 (76.1 %) Tot 110 (78.6%)	3.750 0.622 3.625 0.778 3.671 0.724	T= 0.987 Df=138 P Value = 0.325

Appendix 21

Responsibilities		1 Responsibility more GT	2 Joint responsibil ity	3 Respon sibility More ST	4 Not Appli able	Chi-square
1. Take students identified as having SEN out for help <i>If not applicable please note no. 6</i>	GE	1 (1.9 %)	4 (7.7%)	32 (61.5%)	15 (28.8%)	Chi-square=2.555 Df=3 P value=0.465
	SE	2 (2.3%)	11 (12.5%)	59 (67%)	16 (18.2%)	*Without the option “Not applicable” Chi-square=0.415 Df=2 P value=0.813
	Tot.	3 (2.1%)	15 (10.7%)	91 (65%)	31 (22.1%)	
2. Suggest goals & objectives for the IEP of students with disabilities	GE	2 (3.8%)	20 (19.3%)	30 (57.1%)		Chi-square=0.395 Df=2 P value=0.821
	SE	2 (2.3%)	32 (36.4%)	54 (61.4%)		
	Tot.	4 (2.9%)	52 (37.1%)	84 (60%)		
3. Adapt lessons, materials for students with disabilities	GE	4 (7.7%)	18 (34.6%)	30 (57.7%)		Chi-square=3.684 Df=2 P value=0.158
	SE	6 (6.8%)	18 (20.5%)	64 (72.7%)		
	Tot.	10 (7.1%)	36 (25.7%)	94 (67.1%)		
4. Work with students with disabilities in the co-teaching class	GE	2 (3.8%)	20 (38.5%)	30 (57.7%)		Chi-square=0.395 Df=2 P value=0.821
	SE	2 (2.3%)	32 (36.4%)	54 (61.4%)		
	Tot.	4 (2.9%)	52 (37.1%)	84 (60%)		
5. Work with any students in the co-teaching class	GE	51 (98.1%)	0	1 (1.9%)		Chi-square=8.187 Df=2 P value=0.017
	SE	73 (83%)	12 (13.6%)	3 (3.4%)		
	Tot.	124 (88.6%)	12 (8.6%)	4 (2.9%)		
6. Monitor progress of students with disabilities	GE	-	37 (71.2%)	15 (28.8%)		Chi-square=0.603 Df=1 P value=0.437
	SE	-	57 (64.8%)	31 (35.2%)		
	Tot.	-	94 (67.1%)	46 (32.9%)		
7. Monitor progress of any students	GE	46 (88.5%)	4 (7.7%)	2 (3.8%)		Chi-square=5.608 Df=2 P value=0.061
	SE	73 (83%)	15 (17%)	0		
	Tot.	119	19	2		

		(85%)	(13.6%)	(1.4%)	
8. Know strengths and weaknesses of students with disabilities	GE	1 (1.9%)	35 (67.3%)	16 (30.8%)	Chi-square=3.524 Df=2 P value=0.172
	SE	2 (2.3%)	45 (51.1%)	41 (46.6%)	
	Tot.	3 (2.1%)	80 (57.1%)	57 (40.7%)	
9. Know strengths and weaknesses of any students	GE	42 (80.8%)	9 (17.3%)	1 (1.9%)	Chi-square=1.535 Df=2 P value=0.464
	SE	64 (72.7%)	23 (26.1%)	1 (1.1%)	
	Tot.	106 (75.7%)	32 (22.9%)	2 (1.4%)	
10. Monitor/Work with behaviour problems of students with disabilities	GE	1 (1.9%)	21 (40.4%)	30 (57.7%)	Chi-square=0.564 Df=2 P value=0.754
	SE	1 (1.3%)	31 (35.2%)	56 (63.6%)	
	Tot.	2 (1.4%)	52 (37.1%)	86 (61.4%)	
11. Monitor/Work with any student's behaviour problems	GE	43 (82.7%)	8 (15.4%)	1 (1.9%)	Chi-square=8.347 Df=2 P value=0.015
	SE	52 (59.1%)	32 (36.4%)	4 (4.5%)	
	Tot.	95 (67.9%)	40 (28.6%)	5 (3.6%)	
12. Teach learning strategies and study skills to the class	GE	39 (75%)	13 (25%)	0	Chi-square=5.315 Df=2 P value=0.070
	SE	52 (59.1%)	31 (35.2%)	5 (5.7%)	
	Tot.	91 (65%)	44 (31.4%)	5 (3.6%)	
13. Select teaching methods	GE	32 (61.5%)	18 (34.6%)	2 (3.8%)	Chi-square=1.000 Df=2 P value=0.607
	SE	47 (53.4%)	38 (42.3%)	3 (3.4%)	
	Tot.	79 (56.4%)	56 (40%)	5 (3.6%)	
14. Group the children within classroom	GE	40 (76.9%)	11 (21.2%)	1 (1.9%)	Chi-square=3.376 Df=2 P value=0.185
	SE	60 (68.2%)	28 (31.8%)	0	
	Tot.	100 (71.4%)	39 (27.9%)	1 (0.7%)	
15. Set rules for student behaviour	GE	38 (73.1%)	13 (25%)	1 (1.9%)	Chi-square=3.681 Df=2 P value=0.159
	SE	51 (58%)	36 (40.9%)	1 (1.1%)	
	Tot.	89	49	2	

		(63.5%)	(35%)	(1.4%)	
16. Leads in a co-taught classroom	GE	46 (88.5%)	6 (11.5%)	-	Chi-square=0.510 Df=1 P value=0.475
	SE	74 (84.1%)	14 (15.9%)	-	
	Tot.	120 (85.7%)	20 (14.3%)	-	
17. Select instructional technology for the class	GE	35 (67.3%)	15 (28.8%)	2 (3.8%)	Chi-square=3.808 Df=2 P value=0.149
	SE	45 (51.1%)	40 (45.5%)	3 (3.4%)	
	Tot.	80 (57.1%)	55 (39.3%)	5 (3.6%)	
18. Plan daily the content of the lesson	GE	37 (71.2%)	14 (26.9%)	1 (1.9%)	Chi-square=0.160 Df=2 P value=0.923
	SE	64 (72.7%)	23 (26.1%)	1 (1.1%)	
	Tot.	101 (72.1%)	37 (26.4%)	2 (1.4%)	
19. Present/teach new content within classroom	GE	43 (82.7%)	7 (13.5%)	2 (3.8%)	Chi-square=1.195 Df=2 P value=0.550
	SE	76 (86.4%)	11 (12.5%)	1 (1.1%)	
	Tot.	119 (85%)	18 (12.9%)	3 (2.1%)	
20. Grade/evaluate all students	GE	47 (90.4%)	3 (5.8%)	2 (3.8%)	Chi-square=1.340 Df=2 P value=0.512
	SE	80 (90.9%)	7 (8%)	1 (1.1%)	
	Tot.	127 (90.7%)	10 (7.1%)	3 (2.1%)	
21. Grade/evaluate students with SEN	GE	22 (42.3%)	19 (36.5%)	11 (21.2%)	Chi-square=2.925 Df=2 P value=0.232
	SE	25 (28.4%)	42 (47.7%)	21 (23.9%)	
	Tot.	47 (33.6%)	61 (43.6%)	32 (22.9%)	
22. Assign work to all students	GE	47 (90.4%)	5 (9.6%)	-	Chi-square=0.353 Df=1 P value=0.552
	SE	82 (93.2%)	6 (6.8%)	-	
	Tot.	129 (92.1%)	11 (7.9%)	-	
23. Assign work to students with SEN	GE	15 (28.8%)	20 (38.5%)	17 (32.1%)	Chi-square=2.810 Df=2 P value=0.245
	SE	15 (17%)	37 (42%)	36 (40.9%)	
	Tot.	30 (21.4%)	57 (40.7%)	53 (37.9%)	

24. Arrange the physical classroom environment	GE	31 (59.6%)	20 (38.5%)	1 (1.9%)	Chi-square=2.071 Df=2 P value=0.355
	SE	58 (65.9%)	30 (34.1%)	0	
	Tot.	89 (63.6%)	50 (35.7%)	1 (0.7%)	
25. Meets and informs the parents of disabled students about their progress and behaviour	GE	0	36 (69.2%)	16 (30.8%)	Chi-square=6.597 Df=2 P value=0.037
	SE	5 (5.7%)	44 (50%)	39 (44.3%)	
	Tot.	5 (3.6%)	80 (57.1%)	55 (39.3%)	
26. Meets and informs all students' parents about their progress and behaviour	GE	46 (88.5%)	3 (5.8%)	3 (5.8%)	Chi-square=6.493 Df=2 P value=0.039
	SE	86 (97.7%)	2 (2.3%)	0	
	Tot.	132 (94.3%)	5 (3.6%)	3 (2.1%)	
27. Select activities within classroom	GE	35 (67.3%)	15 (28.8%)	2 (3.8%)	Chi-square=3.674 Df=2 P value=0.159
	SE	58 (65.9%)	30 (34.1%)	0	
	Tot.	93 (66.4%)	45 (32.1%)	2 (1.4%)	

Appendix 22

Teachers' perceptions towards recommended collaborative practices

	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly disagree 5	Means /Sd	T-test
1. Co-teachers need common planning time officially scheduled during school hours to coordinate efforts in the collaborative class	GE 16 (30.8 %) SE 30 (34.1%) Tot. 46 (32.9%)	27 (51.9%) 42 (47.7%) 69 (49.3%)	7 (13.5 %) 10 (11.4 %) 17 (12.1%)	0 5 (5.7 %) 5 (3.6%)	2 (3.8 %) 1 (1.1 %) 3 (2.1%)	1.942 0.895 1.921 0.887 1.929 0.887	T=0.140 DF=138 P value= 0.889
2. Co-teachers should meet daily to plan lessons	GE 8 (15.4 %) SE 15 (17 %) 23 Tot. (16.4%)	24 (46.2%) 48 (54.5%) 72 (51.4%)	9 (17.3 %) 13 (14.8 %) 22 (15.7%)	9 (17.3 %) 11 (12.5 %) 20 (14.3%)	2 (3.8 %) 1 (1.1 %) 3 (2.1%)	2.489 1.075 2.261 0.928 2.343 0.987	T=1.273 DF=138 P value= 0.205
3. Co-teachers need a weekly planning period	GE 14 (26.9 %) SE 28 (31.8 %) 42 Tot. (30%)	26 (50 %) 46 (52.3%) 72 (51.4%)	8 (15.4 %) 11 (12.5 %) 20 (14.3%)	2 (3.8 %) 2 (2.3 %) 4 (2.9%)	1 (1.9 %) 1 (1.1 %) 2 (1.4%)	2.039 0.885 1.886 0.794 1.943 0.829	T=1.049 DF=138 P value= 0.296
4. Co-teachers should share classroom management responsibilities	GE 9 (17.3 %) 26 SE 35 Tot. (25%)	20 (38.5%) 42 (47.7%) 62 (44.3%)	8 (15.4 %) 16 (18.2 %) 24 (17.1%)	8 (15.4 %) 4 (4.2 %) 12 (8.6%)	7 (13.5%) 0 7 (5%)	2.692 1.307 1.978 0.816 2.243 1.079	T=3.988 DF=138 P value= 0.000
5. Co-teachers should share classroom instruction	GE 7 (13.5 %) 19 SE 26 Tot. (18.6%)	12 (23.1%) 38 (43.2%) 50 (35.7%)	10 (19.2 %) 18 (20.5 %) 28 (20%)	16 (30.8 %) 12 (13.6 %) 28 (20%)	7 (13.5%) 1 (1.1 %) 8 (5.7%)	3.077 1.281 2.295 0.996 2.586 1.169	T=4.025 DF=138 P value= 0.000
6. Co-teachers should establish and maintain specific areas of responsibility	GE 25 (48.1 %) 32 SE 57 Tot. (40.7%)	22 (42.3%) 38 (43.2%) 60 (42.9%)	4 (7.7 %) 12 (13.6 %) 16 (11.4%)	1 (1.9 %) 4 (4.5 %) 5 (3.6%)	0 2 2 (1.4%)	1.635 0.715 1.932 0.944 1.821 0.875	T= -1,961 DF=138 P value= 0.052
7. Special teacher should be a resource to all students in a collaborative class	GE 5 (9.6 %) 21 SE 26 Tot. (18.6%)	9 (17.3%) 35 (39.8%) 44 (31.4%)	8 (15.4 %) 15 (17 %) 23 (16.4%)	16 (30.8 %) 14 (15. 9 %) 30 (21.4%)	14 (26.9%) 3 (3.4 %) 17 (12.1%)	3.481 1.321 2.352 1.115 2.771 1.310	T=5.399 DF=138 P value= 0.000
8. Special teacher should withdraw pupils with SEN out of class	GE 5 (9.6 %) 7 SE 12 Tot. (8.6%)	10 (19.2%) 33 (37.5%) 43 (30.7%)	14 (26.9 %) 30 (34.1%) 44 (31.4%)	12 (23.1 %) 15 (17 %) 27 (19.3%)	11 (21.2%) 3 (3.4 %) 14 (10%)	3.269 2.269 2.705 0.096 2.914 1.116	T=2.975 DF=138 P value= 0.003

Appendix 23

Teachers' perceptions of their collaborative experience and their participation in a co-taught classroom.

	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly disagree 5	Means /Sd	T-test
1. My co-teaching partner and I work very well together.	GE 11 (21.2 %)	24 (46.2 %)	11 (21.2 %)	3 (5.8 %)	3 (5.8 %)	2.289 1.054	T=1,032 DF=138 P value= 0.304
	SE 22 (25 %)	42 (47.7 %)	18 (20.5 %)	4 (4.5 %)	2 (2.3 %)	2.114 0.915	
	Tot 33 (23.6%)	66 (47.1%)	29 (20.7%)	7 (5%)	5 (3.6%)	2.179 0.969	
2. In my collaborative experience, I do more than my partner.	GE 10 (19.2 %)	9 (17.3 %)	20 (38.5 %)	8 (15.4 %)	5 (9.6 %)	2.789 1.210	T= -5.112 DF=138 P value= 0.000
	SE 0 (12.5 %)	11 (19.3 %)	17 (55.7 %)	49 (12.5%)	11 (12.5%)	3.682 0.852	
	Tot 10 (7.1%)	20 (14.3%)	37 (26.4%)	57 (40.7%)	16 (11.4%)	3.350 1.086	
3. Our different background of knowledge in teaching children with SEN hinders our collaboration	GE 3 (5.8 %)	3 (5.8 %)	9 (17.3 %)	23 (44.2 %)	14 (26.9 %)	3.807 1.085	T=2.076 DF=138 P value= 0.040
	SE 11 (12.5 %)	14 (15.9 %)	11 (12.5 %)	36 (40.9 %)	16 (18.2 %)	3.364 1.297	
	Tot 14 (10%)	17 (12.1%)	20 (14.3%)	59 (42.1%)	30 (21.4%)	3.529 1.238	
4. Our different experience in teaching children with SEN caused problems to our collaboration	GE 3 (5.8 %)	4 (7.7 %)	4 (7.7 %)	26 (50 %)	15 (28.8 %)	3.885 1.095	T=1.259 DF=138 P value= 0.210
	SE 9 (10.2 %)	7 (8 %)	13 (14.8 %)	38 (43.2 %)	21 (23.9%)	3.625 1.225	
	Tot 12 (8.6%)	11 (7.9%)	17 (12.1%)	64 (45.7%)	36 (25.7%)	3.721 1.182	
5. Experience in co-teaching has improved my teaching.	GE 9 (17.3 %)	20 (38.5 %)	17 (32.7 %)	4 (7.7 %)	2 (3.8 %)	2.423 0.997	T=1.636 DF=138 P value= 0.104
	SE 20 (22.7 %)	46 (52.3 %)	13 (14.8 %)	7 (8 %)	2 (2.3 %)	2.148 0.941	
	Tot 29 (20.7%)	66 (47.1%)	30 (21.4%)	11 (7.9%)	4 (2.9%)	2.250 0.968	
6. Co-teaching is a worthwhile professional experience	GE 12 (23.1 %)	23 (44.2 %)	13 (25 %)	0 (9.5%)	4 (9.5%)	2.250 1.064	T=1,682 DF=138 P value= 0.095
	SE 27 (30.7 %)	44 (50 %)	13 (14.8 %)	1 (1.1 %)	3 (3.4 %)	1.966 0.902	
	Tot 39 (27.9%)	67 (47.9%)	26 (18.6%)	1 (0.7%)	7 (5%)	2.071 0.972	
7. My partner and I solicit each other's feedback and benefit from it	GE 12 (23.1 %)	17 (32.7 %)	9 (17.3 %)	6 (11.5 %)	8 (15.4 %)	2.635 1.372	T=0,649 DF=138 P value= 0.517
	SE 14 (15.9 %)	36 (40.9 %)	22 (25 %)	12 (13.6 %)	4 (4.5 %)	2.500 1.061	
	Tot 26 (18.6%)	53 (37.9%)	31 (22.1%)	18 (12.9%)	12 (8.6%)	2.550 1.183	
8. I enjoy participating in a co-teaching classroom	GE 9 (17.3%)	23 (44.2 %)	13 (25 %)	4 (7.7 %)	3 (5.8 %)	2.404 1.053	T=1.706 DF=138 P value= 0.090
	SE 29 (33%)	34 (38.6 %)	16 (18.2 %)	6 (6.8 %)	3 (3.4 %)	2.091 1.046	
	Tot 38 (27.1%)	57 (40.7%)	29 (20.7%)	10 (7.1%)	6 (4.3%)	2.207 1.056	

Appendix 24

Outcomes of co-teaching to children with SEN

Co-teaching resulted in students with SEN:		Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly disagree 5	Means/ Sd	T-test
1. Improving their academic learning	GE	6 (11.5 %)	32 (61.5%)	11 (21.2 %)	2 (3.8 %)	1 (1.9 %)	2.231 0.783	T=1.133 DF=138 P value=0.259
	SE	20 (22.7 %)	49 (55.7%)	13 (14.8 %)	5 (5.7%)	1 (1.1 %)	2.068 0.841	
	Tot	26 (18.6%)	81 (57.9%)	24 (17.1 %)	7 (5%)	2 (1.4%)	2.129 0.821	
2. Having difficulties in adjusting to the higher academic expectations of a mainstream classroom, (i.e. curriculum)	GE	6 (11.5 %)	4 (7.7 %)	10 (19.2 %)	27 (51.9 %)	5 (9.5 %)	3.404 3.296	T=0.535 DF=138 P value=0.593
	SE	6 (6.8 %)	19 (21.6%)	19 (21.6 %)	31 (35.2 %)	13 (14.8 %)	3.295 1.166	
	Tot	12 (8.6%)	23 (16.4%)	29 (20.7%)	58 (41.4%)	18 (12.9%)	3.336 1.154	
3. Learning new ways to cope with their exercises/homework	GE	2 (3.8%)	36 (69.2%)	10 (19.2 %)	3 (5.8 %)	1 (1.9 %)	2.327 1.875	T=3.551 DF=138 P value=0.001
	SE	25 (28.4 %)	52 (59.1%)	9 (10.2 %)	1 (1.1 %)	1 (1.1 %)	1.875 0.724	
	Tot	27 (19.3%)	88 (62.9%)	19 (13.6%)	4 (2.9%)	2 (1.4%)	2.043 0.757	
4. Struggling to engage with the learning activity	GE	1 (1.9 %)	7 (13.5%)	7 (13.5 %)	29 (55.8 %)	8 (15.4 %)	3.692 0.961	T=1.275 DF=138 P value=0.205
	SE	3 (3.4 %)	19 (21.6%)	17 (19.3 %)	33 (37.5 %)	16 (18.2 %)	3.455 1.124	
	Tot	4 (2.9%)	26 (18.6%)	24 (17.1%)	62 (44.3%)	24 (17.1%)	3.543 1.069	
5. Increasing positive feelings about themselves as capable learners	GE	13 (25 %)	30 (57.7%)	5 (9.6 %)	4 (7.7 %)	0	2.000 0.817	T=0.810 DF=138 P value=0.420
	SE	28 (31.8 %)	46 (52.3%)	11 (12.5 %)	2 (2.3 %)	1 (1.1 %)	1.886 0.794	
	Tot	41 (29.3%)	76 (54.3%)	16 (11.4%)	6 (4.3%)	1 (0.7%)	1.929 0.801	
6. Reducing their self-confidence	GE	0	0	10 (19.2 %)	25 (48.1 %)	17 (32.7 %)	4.135 0.715	T= -0.810 DF=138 P value=0.420
	SE	1 (1.1 %)	5 (5.7 %)	4 (4.5 %)	41 (46.6 %)	37 (42 %)	4.227 0.867	
	Tot	1 (0.7%)	5 (3.6%)	14 (10%)	66 (47.1%)	54 (38.6%)	4.193 0.813	

7. Understanding better their weaknesses and their strengths	GE	9 (17.3 %)	30 (57.7%)	10 (19.2 %)	1 (1.9 %)	2 (3.8 %)	2.173 0.879	T=0.257 DF=138 P value=0.797
	SE	13 (14.8 %)	57 (64.8%)	12 (13.6 %)	5 (5.7 %)	1 (1.1 %)	2.136 0.776	
	Tot	22 (15.7%)	87 (62.1%)	22 (15.7%)	6 (4.3%)	3 (2.1%)	2.150 0.813	
8. Undermining their self esteem	GE		1 (1.9 %)	9 (17.3 %)	27 (51.9 %)	15 (28.8 %)	4.077 0.737	T= -1.252 DF=138 P value=0.213
	SE		4 (4.5 %)	9 (10.2%)	36 (40.9 %)	39 (44.3 %)	4.250 0.820	
	Tot	0	5 (3.6%)	18 (12.9%)	63 (45%)	54 (38.6%)	4.186 0.792	
9. Becoming more interested in participating in learning activities	GE	10 (19.2 %)	30 (57.7%)	6 (11.5 %)	4 (7.7 %)	2 (3.8 %)	2.192 0.971	T= -0.286 DF=138 P value=0.775
	SE	14 (15.9 %)	49 (55.7%)	18 (20.5 %)	4 (4.5%)	3 (3.4 %)	2.239 0.897	
	Tot	24 (17.1%)	79 (56.4%)	24 (17.1%)	8 (5.7%)	5 (3.6%)	2.221 0.922	
10. Undermining their concentration	GE	0	5 (9.6 %)	4 (7.7 %)	30 (57.7 %)	13 (25 %)	3.981 0.852	T=0.808 DF=138 P value=0.420
	SE	1 (1.1 %)	9 (10.2%)	13 (14.8 %)	44 (50%)	21 (23.9 %)	3.852 0.941	
	Tot	1 (0.7%)	14 (10%)	17 (12.1%)	74 (52.9%)	34 (24.3%)	3.900 0.908	
11. Being better able to control their behaviour their	GE	10 (19.2 %)	27 (51.9%)	9 (17.3 %)	5 (9.6 %)	1 (1.9 %)	2.231 0.942	T=1.745 DF=138 P value=0.083
	SE	21 (23.9 %)	52 (59.1%)	12 (13.6 %)	2 (2.3 %)	1 (1.1 %)	1.977 0.758	
	Tot	31 (22.1%)	79 (56.4%)	21 (15%)	7 (5%)	2 (1.4%)	2.071 0.837	
12. Undermining their interaction with their peers during break time	GE	1 (1.9 %)	3 (5.8 %)	9 (17.3 %)	22 (42.3 %)	17 (32.7 %)	3.981 0.959	T=0.406 DF=138 P value=0.685
	SE	1 (1.1 %)	11 (12.5%)	12 (13.6 %)	35 (39.8 %)	29 (33 %)	3.909 1.035	
	Tot	2 (1.4%)	14 (10%)	21 (15%)	57 (40.7%)	46 (32.9%)	3.936 1.005	
13. Being labelled negatively by their peers	GE	0	5 (9.6 %)	9 (17.3 %)	19 (36.5 %)	19 (36.5 %)	4.000 0.970	T=0.490 DF=138 P value=0.685
	SE	5 (5.7 %)	5 (5.7 %)	13 (14.8 %)	35 (39.8 %)	30 (34.1 %)	3.909 1.110	
	Tot	5 (3.6%)	10 (7.1%)	22 (15.7%)	54 (38.6%)	49 (35%)	3.943 1.058	

14. Interacting more with their peers during break time	GE	8 (15.4 %)	24 (46.2%)	14 (26.9 %)	2 (3.8 %)	4 (7.7 %)	2.423 1.054	T=1.470 DF=138 P value= 1.144
	SE	16 (18.2 %)	54 (61.4%)	8 (9.1 %)	7 (8 %)	3 (3.4 %)	2.171 0.937	
	Tot	24 (17.1%)	78 (55.7%)	22 (15.7%)	9 (6.4%)	7 (5%)	2.264 0.986	
15. Avoiding social isolation during lesson time	GE	9 (17.3 %)	22 (42.3%)	11 (21.2 %)	4 (7.7 %)	6 (11.5 %)	2.539 1.212	T=1.796 DF=138 P value= 0.075
	SE	20 (22.7 %)	47 (53.4%)	8 (9.1 %)	10 (11.4 %)	3 (3.4 %)	2.193 1.027	
	Tot	29 (20.7%)	69 (49.3%)	19 (13.6%)	14 (10%)	9 (6.4%)	2.321 1.108	
16. Displaying more challenging behaviour	GE	1 (1.9 %)	0	9 (17.3 %)	23 (44.2 %)	19 (36.5 %)	4.135 0.840	T= -0.728 DF=138 P value= 0.468
	SE	0	4 (4.5 %)	8 (9.1 %)	39 (44.3 %)	37 (42 %)	4.239 0.802	
	Tot	1 (0.7%)	4 (2.9%)	17 (12.1%)	62 (44.3%)	56 (40%)	4.200 0.815	
17. Reinforcing their social skills (i.e. communication, cooperation, interpersonal relationships)	GE	13 (25%)	28 (53.8%)	8 (15.4 %)	1 (1.9 %)	2 (3.8 %)	2.058 0.916	T=2.037 DF=138 P value= 0.044
	SE	30 (34.1 %)	52 (59.1%)	3 (3.4 %)	2 (2.3 %)	1 (1.1 %)	1.773 0.723	
	Tot	43 (30.7%)	80 (57.1%)	11 (7.9%)	3 (2.1%)	3 (2.1%)	1.879 0.809	
18. Promoting the sense that they belong in classroom community	GE	10 (19.2 %)	29 (55.8%)	10 (19.2 %)	1 (1.9 %)	2 (3.8 %)	2.154 0.894	T=2.478 DF=138 P value= 0.014
	SE	30 (34.1 %)	48 (54.5%)	8 (9.1%)	1 (1.1%)	1 (1.1%)	1.807 0.741	
	Tot	40 (28.6%)	77 (55%)	18 (12.9%)	2 (1.4%)	3 (2.1%)	1.936 0.815	
19. Interrupting their social relationships with other children (i.e. friendships)	GE	2 (3.8 %)	4 (7.7 %)	6 (11.5 %)	24 (46.2 %)	16 (30.8 %)	3.923 1.045	T= -1.802 DF=138 P value= 0.074
	SE	0	4 (4.5%)	8 (9.1 %)	42 (47.7 %)	34 (38.6 %)	3.327 1.167	
	Tot	2 (1.4%)	8 (5.7%)	14 (10%)	66 (47.1%)	50 (35.7%)	4.100 0.900	
20. Undermining their interaction with their peers during lesson time	GE	3 (5.8 %)	12 (23.1%)	10 (19.2 %)	19 (36.5 %)	8 (15.4 %)	3.327 1.167	T= -1.460 DF=138 P value= 0.147
	SE	5 (5.7 %)	13 (14.8%)	13 (14.8 %)	36 (40.9 %)	21 (23.9 %)	3.625 1.168	

	Tot	8 (5.7%)	25 (17.9%)	23 (16.4%)	55 (39.3%)	29 (20.7%)	3.514 1.172	
21. Being socially accepted by their peers	GE	7 (13.5%)	26 (50%)	15 (28.8 %)	4 (7.7 %)	0	2.308 0.805	T=0.733 DF=138 P value= 0.465
	SE	13 (14.8 %)	51 (58 %)	18 (20.5 %)	5 (5.7 %)	1 (1.1 %)	2.205 0.805	
	Tot	20 (14.3%)	77 (55.7%)	33 (23.6%)	9 (6.4%)	1 (0.7%)	2.243 0.804	
22. Promoting their participation in teamwork activities	GE	8 (15.4 %)	22 (42.3%)	16 (30.8 %)	4 (7.7 %)	2 (3.8 %)	2.423 0.977	T=1.333 DF=138 P value= 0.185
	SE	21 (23.9 %)	47 (53.4%)	8 (9.1 %)	7 (8 %)	5 (5.7%)	2.182 1.067	
	Tot	29 (20.7%)	69 (49.3%)	24 (17.1%)	11 (7.9%)	7 (5%)	2.271 1.038	

Appendix 25

Outcomes of co-teaching to all children

18. Co-teaching resulted in all students:						Means/Sd	T-test
	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly disagree 5		
1. Improving their academic learning	GE 6 (11.5 %)	17 (32.7 %)	14 (26.9 %)	9 (17.3 %)	6 (11.5 %)	2.846 1.195	T= -0.142 DF=138 P value= 0.887
	SE 6 (6.8 %)	33 (37.5 %)	27 (30.7 %)	10 (11.4 %)	12 (13.6 %)	2.875 1,143	
	Tot 12 (8.6%)	50 (35.7%)	41 (29.3%)	19 (13.6%)	18 (12.9%)	2.864 1.158	
2. Promoting their acceptance of individual differences	GE 9 (17.3 %)	19 (36.5 %)	7 (13.5 %)	11 (21.2 %)	6 (11.5 %)	2.731 1.300	T=3.494 DF=138 P value= 0.001
	SE 22 (25%)	46 (52.3 %)	12 (13.6 %)	7 (8 %)	1 (1.1 %)	2.079 0.899	
	Tot 31 (22.1%)	65 (46.3%)	19 (13.6%)	18 (12.9%)	7 (5%)	2.321 1.108	
3. Receiving less attention and support in their learning	GE 0 (5.8%)	3 (9.6%)	5 (9.6%)	30 (57.7%)	14 (26.9%)	4.058 0.778	T=0.787 DF=138 P value= 0.433
	SE 1 (1.1 %)	5 (5.7 %)	14 (15.9 %)	46 (52.3%)	22 (25%)	3.943 0.862	
	Tot 1 (0.7%)	8 (5.7%)	19 (13.6%)	76 (53.3%)	36 (25.7)	3.986 0.831	
4. Hindering their efficient learning	GE 2 (3.8%)	14 (26.9%)	3 (5.8%)	15 (28.8%)	18 (34.6%)	3.635 1.314	T= -2.694 DF=138 P value= 0.008
	SE 2 (2.3 %)	3 (3.4%)	8 (9.1%)	43 (48.9%)	32 (36.4%)	4.136 0.886	
	Tot 4 (2.9%)	17 (12.1%)	11 (7.9%)	58 (41.4%)	50 (35.7%)	3.950 1.088	
5. Becoming more intolerant of students of disabilities	GE 2 (3.8 %)	2 (3.8 %)	5 (9.6%)	24 (46.2%)	19 (36.5%)	4.077 0.987	T=1.330 DF=138 P value= 0.186
	SE 1 (1.1 %)	9 (10.2 %)	14 (15.9 %)	42 (47.7%)	22 (25%)	3.852 0.953	
	Tot 3 (2.1%)	11 (7.9%)	19 (13.6%)	66 (47.1%)	41 (29.3%)	3.936 0.969	
6. Exhibiting challenging behaviour	GE 0 (5.8%)	3 (9.6%)	5 (9.6%)	29 (55.8%)	15 (28.8%)	4.077 0.788	T= -0.188 DF=138 P value= 0.851
	SE 4 (4.5 %)	9 (10.2%)	49 (56.7%)	26 (29.5%)	41 (29.3%)	4.102 0.759	
	Tot 0 (5%)	7 (10%)	14 (55.7%)	78 (29.3%)	41 (29.3%)	4.093 0.767	

7. Becoming more interested in participating to learning activities	GE	4 (7.7%)	22 (42.3%)	16 (30.8%)	4 (7.7 %)	6 (11.5%)	2.731 1.105	T=0.298 DF=138 P value=0.766
	SE	2 (2.3 %)	39 (44.3%)	35 (39.8%)	9 (10.2%)	3 (3.4%)	2.682 0.824	
	Tot	6 (4.3%)	61 (43.6%)	51 (36.4%)	13 (9.3%)	9 (6.4%)	2.700 0.935	
8. Improving their behaviour	GE	4 (7.7%)	21 (40.4%)	17 (32.7%)	6 (11.5%)	4 (7.7%)	2.711 1.035	T=0.903 DF=138 P value=0.368
	SE	7 (8%)	43 (48.9%)	23 (26.1%)	12 (13.5%)	3 (3.4%)	2.557 0.945	
	Tot	11 (7.9%)	64 (45.7%)	40 (28.6%)	18 (12.9%)	7 (5%)	2.614 0.979	
9.Undermining their concentration	GE	3 (5.8%)	4 (7.7%)	8 (15.4%)	25 (48.1%)	12 (23.1%)	3.750 1.082	T=1.291 DF=138 P value=0.199
	SE	2 (2.3%)	12 (13.6%)	23 (26.1%)	40 (45.5%)	11 (12.5%)	3.523 0.959	
	Tot	5 (3.6%)	16 (11.4%)	31 (22.1%)	65 (46.4%)	23 (16.4%)	3.607 1.009	
10. Promoting their social and emotional growth (i.e. empathy, sensitivity, mutual aid, solidarity, mutual understanding)	GE	12 (23.1%)	27 (51.9%)	7 (13.5%)	3 (5.8%)	3 (3.8%)	2.192 1.049	T= 2.138 DF=138 P value=0.034
	SE	33 (37.5%)	43 (48.9%)	6 (6.8%)	5 (5.7%)	1 (1.1%)	1.841 0.869	
	Tot	45 (32.1%)	70 (50%)	13 (9.3%)	8 (5.7%)	4 (2.9%)	1.971 0.952	
11. Promoting their interaction and cooperation with disabled students	GE	9 (17.3%)	31 (59.6%)	7 (13.5%)	3 (5.8%)	3 (3.8 %)	2.192 0.929	T=1.160 DF=138 P value=0.248
	SE	30 (34.1%)	43 (48.9%)	5 (5.7%)	6 (6.8%)	4 (4.5%)	1.989 1.045	
	Tot	39 (27.9%)	74 (52.9%)	12 (8.6%)	9 (6.4%)	6 (4.3%)	2.064 1.005	

Appendix 26

Factors affecting co-teaching

		Not at all important 1	Of limited importance 2	Somewhat important 3	Very important 4	Means/ Sd	T-test
1. Training of general education teachers in co-teaching	GE	2 (3.8%)	2 (3.8%)	22 (42.3%)	26 (50 %)	3.385 0.745	T= -2.484 DF= 138 P value =0.014
	SE	2 (2.3%)	0	23 (26.1%)	63 (71.6%)	3.673 0.601	
	Tot	4 (2.9%)	2 (1.4%)	45 (32.1%)	89 (63.6%)	3.564 0.670	
2. Training of special education teachers in co-teaching	GE	1 (1.9%)	0	14 (26.9%)	37 (71.2 %)	3.673 0.585	T=0.542 DF=138 P value =0.589
	SE	1 (1.1%)	5 (5.7%)	21 (23.9%)	61 (69.3 %)	3.614 0.651	
	Tot	2 (1.4%)	5 (3.6%)	35 (25%)	98 (70%)	3.636 0.626	
3. The severity of child's/children's type of special educational need that is/are included in a co-teaching class	GE	1 (1.9 %)	4 (7.7 %)	18 (34.6%)	29 (55.8 %)	3.442 0.725	T= -0.413 DF=138 P value =0.680
	SE	0	4 (4.5%)	37 (42%)	47 (53.4%)	3.489 0.587	
	Tot	1 (0.7%)	8 (5.7%)	55 (39.3%)	76 (54.3%)	3.471 0.639	
4. Frequent and harmonious collaboration with parents	GE	1 (1.9%)	3 (5.8%)	12 (23.1%)	36 (69.2%)	3.596 0.693	T=0.048 DF=138 P value =0.962
	SE	0	4 (4.5%)	28 (31.8%)	56 (63.6%)	3.590 0.580	
	Tot	1 (0.7%)	7 (5%)	40 (28.6%)	92 (65.7%)	3.593 0.622	
5. Clear allocation between co-teachers of their roles and responsibilities	GE	2 (3.8%)	4 (7.7%)	20 (38.5%)	26 (50 %)	3.346 0.789	T=1.215 DF=138 P value =0.226
	SE	2 (2.3 %)	7 (8 %)	51 (58 %)	28 (31.8 %)	3.193 0.676	
	Tot	4 (2.9%)	11 (7.9%)	71 (50.7%)	54 (38.6%)	3.250 0.721	
6. Harmonious collaboration and communication between co-teachers	GE	1 (1.9 %)	0	12 (23.1%)	39 (75%)	3.711 0.572	T= -0.666 DF=138 P value = 0.507
	SE	1 (1.1 %)	0	17 (19.3%)	70 (79.5%)	3.773 0.496	
	Tot	2 (1.4%)	0	29 (20.7%)	109 (77.9%)	3.750 0.525	
7. Positive attitudes of general education teachers towards special education teachers	GE	1 (1.9 %)	0	11 (21.2 %)	40 (76.9 %)	3.731 0.564	T= 0.450 DF=138 P value =0.653
	SE	1 (1.1%)	6 (6.8%)	13 (14.8%)	68 (77.3%)	3.681 0.653	
	Tot	2 (1.4%)	6 (4.3%)	24 (17.1%)	108 (77.1%)	3.700 0.619	
8. Sensitivity of teachers towards disabled students	GE	1 (1.9 %)	0	7 (13.5 %)	44 (84.6 %)	3.807 0.525	T= 2.330 DF=138 P value = 0.021
	SE	2 (2.3 %)	0	32 (36.4%)	54 (61.4%)	3.568 0.621	
	Tot	3 (2.1%)	0	39 (27.9%)	98 (70%)	3.657 0.597	

9. Sufficient/adequate supplies and teaching aids (e.g. materials, equipment)	GE	0	2 (3.8%)	15 (28.8%)	35 (67.3%)	3.635	T=0.621 DF=138 P value =0.536
	SE	1 (1.1%)	4 (4.5%)	27 (30.7%)	56 (63.6%)	3.568	0.639
	Tot	1 (0.7%)	6 (4.3%)	42 (30%)	91 (65%)	3.593	0.610
10. Length of experience in co-teaching	GE	2 (3.8 %)	8 (15.4 %)	27 (51.9 %)	15 (28.8 %)	3.058	T= 0.762 DF=138 P value =0.447
	SE	2 (2.3 %)	22 (25 %)	42 (47.7 %)	22 (25 %)	2.955	0.784
	Tot	4 (2.9%)	30 (21.4%)	69 (49.3%)	37 (26.4%)	2.993	0.773
11. Mutual planning time	GE	2 (3.8%)	13 (25%)	26 (50%)	11 (21.2 %)	2.885	T= -2.186 DF=138 P value =0.030
	SE	0 (15.9 %)	14 (52.3 %)	46 (31.8 %)	28 (0.676)	3.159	0.676
	Tot	2 (1.4%)	27 (19.3%)	72 (51.4%)	39 (27.9%)	3.057	0.727
12. Employment of special co-teachers at the beginning of each academic year (and not at the middle of the year)	GE	2 (3.8%)	1 (1.9%)	10 (19.2%)	39 (75%)	3.654	T= -1.990 DF=138 P value = 0.049
	SE	1 (1.1 %)	1 (1.1 %)	8 (9.1 %)	78 (88.6 %)	3.852	0.468
	Tot	3 (2.1%)	2 (1.4%)	18 (12.9%)	117 (83.6%)	3.779	0.576
13. Special co-teachers participating in fewer mainstream classrooms	GE	4 (7.7%)	17 (32.7%)	18 (34.6%)	13 (25%)	2.769	T= -2.697 DF=138 P value = 0.008
	SE	6 (6.8%)	12 (13.6%)	28 (31.8%)	42 (47.7 %)	3.205	0.924
	Tot	10 (7.1%)	29 (20.7%)	46 (32.9%)	55 (39.3%)	3.043	0.944
14. Special co-teachers collaborating with fewer general education teachers	GE	9 (17.3%)	16 (30.8%)	20 (38.5%)	7 (13.5%)	2.481	T= -0.298 DF=138 P value =0.767
	SE	18 (20.5 %)	26 (29.5 %)	23 (26.1 %)	21 (23.9 %)	2.534	1.072
	Tot	27 (19.3%)	42 (30%)	43 (30.7%)	28 (20%)	2.514	1.021

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