



Study of the Effectiveness of Special Education Teachers on the Promotion and Implementation of Integration Practices

Dimitra Sklavaki

Master in Special Educational Needs, University of East London, London, UK

Email: dsklavaki@uel.gr

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Abstract

In recent years, the school inclusion of children with special educational needs has been a central goal of European educational and social policy. However, on a practical level, integration is a very complex task as it requires a change from previously established practices in the context of a more general educational reconstruction. While the development and implementation of educational policy as defined by national and global imperatives shapes broader social and institutional teaching frameworks, teachers' interpretations and understanding of their own teaching self-efficacy in relation to inclusion is the catalyst factor that allows them to master the process and play an important role in the implementation of inclusive education. The purpose of this research report is to study the didactic self-effectiveness of special education teachers in the application of inclusion practices. The research involved 83 special education teachers between the ages of 22 and 57. 65 of them were women while in terms of their educational level 32 were holders of a postgraduate degree. Most of the participants (N = 53) had up to 5 years of service, 19 of them had from 6 to 10 and the rest from 11 and over. The questionnaire they were then asked to complete consisted of two parts, a demographic questionnaire and the scale "The Teacher Efficacy to Implement Inclusive Practices" by Sharma, Loreman and Forlin [1].

Subject Areas

Special Education

Keywords

Special Education, Special Education Teachers, Implementation, Self-Effectiveness, Integration Policies

1. Introduction

The purpose of this research is to study the didactic self-efficacy of special education teachers and education related to integration practices. Of particular interest are the study of the factors that shape didactic self-efficacy and especially the effect of teaching experience on their beliefs. More specifically, the views of special education teachers in primary education will be studied on each of the dimensions of didactic self-efficacy in the application of inclusive practices such as inclusive teaching skills, the ability to manage problem behaviors and the ability to work with parents and the specialist auxiliary staff.

In recent years, the school inclusion of children with special educational needs has been a central goal of European education and social policy. However, on a practical level, integration is a very complex task as it presupposes the change from the previously established practices in the context of a general educational reconstruction [2] [3]. Although 28 years have passed since the Salamanca Declaration [4] and 18 years since the Convention on the Rights of Persons with Disabilities [5] the educational system has not managed to mitigate the academic and social exclusion of students with special educational needs [6]. A prerequisite for inclusive education is for schools to include, care for and educate all students regardless of differences in skills, gender, language, nationality and socioeconomic profile [7].

Although the self-efficacy of students in a classroom is often studied, it seems that teachers' sense of effectiveness plays an equally important role in the functioning of the classroom. Compared to those who doubt themselves, teachers with a strong sense of effectiveness typically use more effective teaching strategies, are less prone to burnout, and are more committed to the profession [8] [9]. Teachers' beliefs about their potential can also influence what students experience. For example, modest but significant correlations have been found between teachers' self-efficacy and their students' achievements [10] [11] [12].

From the study of the existing bibliography the following research questions have emerged which are to be answered in the present research report:

- What are the views of special education teachers on the teaching effectiveness of their inclusive teaching skills?
- What are the views of special education teachers on the teaching effectiveness of the practices they use to manage problem behaviors?
- What are the views of special education teachers on the effectiveness of teaching in the ability to work with parents and special support staff?
- Is there an effect of demographic factors of special education teachers (gender, age, educational level, work experience) on their views on their teaching self-efficacy?
- Is there a correlation between the three sub-scales of teaching self-efficacy?

In the first chapter of the research report, the theoretical framework of the concepts of inclusion and didactic self-effectiveness will be developed. In addition, reference will be made to previous corresponding research in the literature

in order to compare their results with the results of this research. The second chapter analyzes the methodological planning followed for conducting the research. The sample selected, the validity and reliability of the instrument provided will be analyzed while extensive reference will be made to the procedure followed and to the ethical and ethical issues that the researcher was asked to address. The third chapter follows the statistical analysis of the results. The descriptive characteristics of the sample are presented in detail and then the answers to each of the research questions are given. Then, the conclusions that are compared with the data presented in the literature review of the first chapter are presented. Finally, in the fourth chapter, the research report is completed with the epilogue which summarizes what was mentioned in the previous chapters, mentions the limitations of the research, critically evaluates the conclusions that have emerged and make suggestions for future research.

2. Theoretical Framework

2.1. The Concept of Self-Effectiveness

Bandura in his socio-cognitive theory argues that people play an active role in making decisions related to dealing with a variety of situations by utilizing their cognitive functions while having an internal system that allows them to control their thoughts, feelings and actions. A key role in shaping behavior is played by expectations for oneself and expectations for circumstances, acting as a cognitive mediator in human internal processes. Expectations of self are also answered as expectations of self-efficacy while expectations of circumstances as expectations of outcome. These two concepts seem to be quite related but one does not presuppose the existence of the other. A person can be sure that a certain tactic can bring him the expected result, but he doubts his ability to apply this tactic [12] [14] [15].

The term self-efficacy was coined by Bandura and relates to an individual's beliefs about his or her ability to manage and perform a series of actions in order to achieve his or her goal [16]. The original aim of Bandura's research was to influence the expectation of self-efficacy in the outcome of the treatment process, but later its conclusions were generalized to other areas. More specifically, research data have shown that self-efficacy works predictively in work behavior, athletic and academic performance, in the development of psychosocial characteristics in children and adolescents, in the management of health issues and finally in the resilience of the individual having a significant effect on motivation and effort [17].

It is important to note that the expectation of self-efficacy is not related to an individual's self-esteem or self-perception as it is not a generalized assessment of his or her abilities. On the contrary, self-efficacy refers to specific challenges that the individual faces. For example, an athlete may feel confident about his or her swimming performance (high self-efficacy) but may not feel confident about his or her running performance (low self-efficacy). This does not mean that he evaluates himself as a bad athlete (self-perception) nor does it affect his self-esteem

as running has never been his priority [18] [19] [20] [21].

Finally, the level concerns the degree of difficulty of the activity itself. The simplest situations require a lower expectation of effectiveness while as the demands increase the individual needs to have more supplies to show high self-efficacy [14] [22].

2.2. The Concept of Didactic Self-Efficacy

At a theoretical level, self-efficacy was studied by Bandura [14] in his socio-cognitive theory. Bandura recognizes in his theory the influence of cognitive factors on the behavior of the individual. He argues that for the successful completion of a project the person does not just need to know how to complete it on a practical level but also to feel confident while having confidence in his abilities. In the context of education, teachers' self-efficacy is related to the effort they make in the learning process [23].

In fact, many researchers, wanting to study teachers' readiness for inclusive education, chose to use didactic self-efficacy as a predictor [1] [24] [25]. It is important for teachers to feel confident about their abilities and their ability to manage the classroom especially in an inclusive context. Those who have a high expectation of self-efficacy find that they exert more influence on their students by being interested and trying to make that influence positive [26]. In addition, educators who feel they can meet the challenges of their profession appear to be more sensitive, dedicated, resilient, and persistent in meeting the demands of an inclusion framework. In fact, they contribute positively to the academic progress of their students with innovative interventions adapted to the specific needs of each student [1] [24].

Research conducted in different cultural contexts seems to suggest that didactic self-efficacy is a multi-factor construct. These factors depending on the measuring tool and the researcher can range from three to six but are related to classroom management, motivating students and their involvement in the educational process and finally working with colleagues and parents of students [27].

Research is supported by the need for appropriate educational strategies for successful teaching in an inclusive classroom in general and for responding to the needs of students with SEN in particular. Examples of educational strategies include embedded teaching, differentiated teaching, and activity-based and experiential learning. In addition, students with special educational needs may exhibit provocative behaviors such as self-injurious and aggressive behaviors, which put more pressure on teachers. Research shows that teachers with higher levels of teaching self-efficacy are more successful in managing the problematic behavior of students with special educational needs in inclusive education [1] [28].

Finally, it is argued that working with families and other teachers facilitates the implementation of successful school integration [29] [30]. Guo *et al.* [31]

argued that collaboration is one of the key factors that enable teachers to improve the management of difficult situations related to the teaching of children with special educational needs, thus increasing teaching self-efficacy.

Factors That Affect This Teaching Effectiveness

Past performance accomplishments

Previous successful practice in the field of interest has a significant effect on the individual's sense of effectiveness. Having successfully completed a task once, it is easier to believe that it can be repeated successfully. Past positive success experiences seem to have a greater impact on a person's beliefs about self-efficacy. But in order to establish positive beliefs, the work that is completed each time needs to be demanding with a satisfactory degree of difficulty. On the contrary, one encounters only easily manageable situations, acquires a distorted picture of efficiency which is easily demolished [14] [32].

Vicarious learning

Indirect experience, that is, practice close to a standard professional, can affect self-efficacy. In this way the teacher can be exposed to many different situations by gathering experiences with the result that he feels more confident by undertaking to manage a similar situation. This factor is especially powerful in cases where the person notices someone he considers more experienced, but at the same time can identify with him, to successfully carry out an activity that he himself avoids.

The physiology and the emotional state of the person (psychological and emotional states)

This factor is related to the physical and emotional reactions of the person facing a situation. Sweat, palpitations, anxiety, fear and other similar reactions predispose the person negatively leading to this low efficiency. On the contrary, enthusiasm, physical endurance, anticipation and other reactions that result from pleasant emotions can lead to high self-efficacy.

Verbal persuasion

Verbal reward or discouragement from others affects the expectations, aspirations and handling of a situation by the individual and generally his desire to undertake and successfully complete an activity. Certainly, the prestige and credibility of the person attempting verbal persuasion is related to the degree to which the recipient is affected. However, in any case, verbal persuasion has the least effect of the four factors, while it usually works in combination with one of the other three.

In order to change the expectations of self-efficacy of the individual, either positively or negatively, simply handling the above factors is not enough. To consolidate change and to change beliefs substantially requires cognitive processing of information and reflective thinking [33] [34]. More specifically, in the expectations of didactic self-efficacy, for a more experienced teacher, factors other than positive previous experience plays a secondary role in achieving self-efficacy. In contrast, teachers with little or no experience are greatly influ-

enced by the other three factors [32].

2.3. The Concept of Integration

The word integration is defined as “the systematic placement of one within a larger whole, where the former is completed as an independent, whole part of the larger whole” [35]. The purpose of integration is to create a school for all that will embrace the diversity of each child in terms of interests, goals, capabilities and abilities of each child. All students are admitted to inclusive education without discrimination based on their gender, language, nationality, religion or culture [7].

A basic condition of inclusive education is the realization that each student responds to a different teaching model, therefore the learning process needs to be adapted each time to the needs of each student. In addition, it is necessary to encourage the participation of all students in the social activities of the school and to promote autonomy in decision-making that affects the child directly or indirectly and can manage them [35]. The literature indicates that inclusive education has social, academic and many other benefits for all students and not only for those with special educational needs [36] [37] [38].

However, although inclusive education is a common direction, in practice there are differences per state in terms of institutionalization and also regarding the configuration of the education system [13]. Educational restructuring is a demanding process that includes the remodeling of educational units ensuring accessibility and retraining of teaching staff in the implementation of integration practices and the use of new technologies [39] [40]. In today’s reality, the familiarity with the concepts of “integration”, “integration teacher”, “integration department” and their ever-increasing use does not lead to a substantial inclusion, on the contrary it intensifies the separation [40] [41]. This is practically a development in the field of special education rather than a new model of education in which there will be no label and the stigma of diversity [39]. The specific terminology therefore used to describe the need for specific students only and not the spirit of the educational process leads to their isolation not only academically but also socially [42].

2.4. Measuring Didactic Self-Efficacy

Teaching in an inclusive environment can have several challenges for the teacher as he takes responsibility for the success or failure of all students including those with special learning needs [43]. Based on the literature, there are three factors that compose the success in the implementation of integration practices, the transmissibility of teachers, the ability to manage the classroom and the ability to collaborate with other members of the school community [44].

There are many tools in the literature to measure this teaching effectiveness but few have been designed to measure this variable in teachers of students with special learning needs [45]. Dawson and Scott [46] developed the Teaching Stu-

dents with Disabilities Scale, [1] created the Teachers' Efficacy for Inclusive Practices Scale (TEIP) and developed by Zhang, Wang, Stegall, Losinki, and Katsiyannis [47] the scale "Student Teachers' Efficacy in Teaching Students with Disabilities". The Sharma TEIP scale was used in this study which has strong validity and has been used to measure the expectation of teaching self-efficacy in four different countries, Canada, Australia, Hong Kong and India [1]. In addition, it was used to study the effect of demographic factors on teaching self-efficacy in the implementation of accession practices between four countries, Canada, Australia, Hong Kong and Indonesia [24] and was used to identify variables that affect teachers' teaching self-efficacy in implementing integration practices in Bangladesh. [48].

Very recently the Arabic version of the TEIP scale was weighed by Emam & Al-Mahdy [49]. The teachers who participated in the research showed high levels of didactic self-efficacy for the three subscales and for the general construction. Gender differences were found in the general construction, in the scale of inclusive teaching skills and in the scale of ability to cooperate with parents and special support staff.

2.5. Empirical Study of Didactic Self-Efficacy

Research on the impact of gender and work experience on the expectation of this teaching effectiveness is well advanced but the use of the TEIP scale is quite limited in this area. There is evidence that the two sexes develop differently their expectations for teaching self-efficacy [50] [51], and that the teacher's work experience is inversely proportional to self-efficacy. Research findings suggest that teachers' self-efficacy is increased at the beginning of their careers and gradually decreases as experience increases [52] [53]. Similar results were found in later studies in which young inexperienced teachers were more positive in their views on integration than those with years of service [54] [55]. Teachers with little work experience have difficulty managing problematic classroom behaviors. However, it seems that those who showed higher didactic self-effectiveness had better results in practice when faced with the inclusion environment. It is worth noting that the teachers themselves had a fairly high expectation of self-efficacy in the inclusive teaching skills scale and low in the scale of cooperation with parents and support staff [23].

Continuing, Shaukat, Sharma, and Furlonger [56] reported that female teachers compared to men show higher self-efficacy in teaching students with disabilities while showing greater resilience in implementing inclusive teaching. Shaukat, Vishnumolakala and Al_Bustami [57] argue in the same vein that demographic characteristics such as gender, age, education, and work experience are significantly associated with teaching self-efficacy and job satisfaction with teachers. In addition, previous research confirms that women have higher self-efficacy and job satisfaction by teaching students with learning disabilities while more experienced teachers have higher self-efficacy than male teachers. Emam & Al-Mahdy [49] in their research using the TEIP scale report higher self-efficacy

in women in the whole scale but also in the subscales concerning inclusive teaching skills and the ability to work with parents and the special assistant staff. No significant gender differences were found in the scale of problem behavior management.

In addition, novice and experienced teachers had higher self-efficacy scales on a scale that measured cooperation with parents and special support staff compared to teachers with mediocre experience, while experienced teachers and teachers with mediocre teaching experience generally had higher scores on comparison with novice teachers. These findings contradict previous research. Similarly, there are studies in the literature that do not identify differences between male and female teachers in teaching self-efficacy in the implementation of inclusive practices [24] [58]. The study of Malinen *et al.*, [26] is of particular interest with a sample of teachers from three countries with very different cultures, China, Finland and South Africa who found that the experience of teaching children with special learning needs rather than the work experience in a typical classroom is a strong predictor of measuring didactic self-efficacy in inclusion practices. These findings were later confirmed in a study conducted in two research groups with teachers from Japan and Finland [59] while there are a number of other studies that support similar results. Indicatively, Gebhardt *et al.* [60] argued that special education teachers, in special schools, had higher self-efficacy than general education teachers. Respectively, Sharma *et al.* [61] highlighted experience in special education as a predictor of didactic self-efficacy while Schwab [62] confirms with his research that special education teachers have higher self-efficacy than general education teachers.

An additional factor that has been identified in the literature and seems to influence teachers' perceptions of their self-efficacy is education [63] [64] [65]. Specifically, the increase in education has a positive effect on their teaching self-efficacy but also on their self-confidence while they are more willing to work together [64]. On the other hand, the increase in knowledge acquired through additional education increases the concerns of teachers who tend to question their abilities more [65]. The experience factor seems to compensate in this case as their experience increases their expectation of self-efficacy is regained [64].

Other factors that have been empirically related to teaching self-efficacy are some temperamental characteristics. Persistence, commitment and enthusiasm are some of the characteristics that strengthen the expectation of didactic self-effectiveness of the teacher. At the same time, the school unit seems to influence the expectations of the teachers who work in it. The ability of teachers to intervene in classroom formation, the number of children per class, or some other relevant factor seems to have increased their self-efficacy regardless of student level or other variables [66].

3. Research Methodology

3.1. Methodological Approach

Depending on the nature of the research problem and the research questions

that arise through the literature review, the researcher chooses either the qualitative or the quantitative direction. In quantitative research, trends in a particular area of interest are studied or alternatively the effect of specific variables on others is explained by interpreting the results based on previous studies and hypotheses. When writing the research report on quantitative methodology, the researcher uses defined structures and evaluation criteria while maintaining a more objective and impartial approach [67]. Of course, the most basic and indisputable advantage of quantitative methodology over qualitative one is the representativeness of the results as a consequence of the application of statistical methods [68]. Quantitative methodology and specifically synchronous non-experimental design using weighted questionnaires were applied in this study.

3.2. Sample

The purpose of sampling surveys is to determine, as accurately as possible, the characteristics of a population by studying the census data. The generalizability of the results depends to a large extent on the sampling method used as the quality of the sample is related to the significance of the results. The sampling methods are divided into probability sampling and non-probability sampling while their distinction is related to the way of selecting the units that make up the sample [69]. In the present study, due to the short collection time of the research data the participants will be approached through social media therefore non-probabilistic sampling will be applied.

The sample of the research consisted of 83 special education teachers aged 22 to 57 years. 65 of them were women while in terms of their educational level 32 were holders of a postgraduate degree. Most of the participants (N = 53) had up to 5 years of service, 19 of them had from 6 to 10 and the rest from 11 and over. The rest of their personal information was not requested as their participation in the investigation was made anonymously.

3.3. Research Tool—Questionnaire

The research questionnaire was used as a means of data collection in order to answer the research questions. The most common form of empirical research is the sample survey with questionnaires as it allows the generalization of the results from the sample under study to the general population. In addition, the use of a questionnaire facilitates the analysis of data with the use of statistical tools while at the same time requires relatively less time and money from the researcher [70]. A questionnaire consisting of two parts was used to conduct this research process.

The first part consists of an improvised demographic questionnaire which was constructed by the researcher in order to collect information for the description of the sample. Specifically, participants are asked about their gender, age, educational level and years of service in order for this information to function as independent variables predicting the value of the dependent variable which in this

case is didactic self-efficacy.

The second part of the questionnaire provided consists of the scale “The Teacher Efficacy to Implement Inclusive Practices” (TEIP) by Sharma [24], which examines the inclusive practices applied in the school context. It consists of a total of 18 positions examining three key parameters regarding the development and use of inclusive practices.

3.4. Research Process

Following the approval of the Ethics and Conduct Form by the College committee, the researcher proceeded to collect the data. This process lasted about a month, from March to April 2022. The participants were approached using social media by groups addressed to special education teachers and those around the researcher. Most of the data was collected from the promotion of the questionnaire through Google Forms from one participant to another in the form of an avalanche. Participants were first informed by the information form about the content of the investigation, the preservation of their anonymity and the protection of their personal data and then were led to the consent form which was necessary to continue the process. Their participation in the research was purely voluntary and they could leave at any time without justification or any burden. The questionnaire they were then asked to complete consisted of two parts, a demographic questionnaire and the scale “The Teacher Efficacy to Implement Inclusive Practices” (TEIP) by Sharma, Loreman and Forlin [24], which examines teachers’ effectiveness in accession practices. The time required to complete the questionnaire was approximately 15 minutes. The researcher was available for any clarification throughout the data collection process. The next step was to analyze the data collected and interpret them to answer the research questions. The whole process lasted three months as it is completed on May 27 with the delivery of the research report.

3.5. Data Analysis

The analysis of the data collected from the present research process was done using the statistical tool SPSS (Statistical Package for Social Sciences). The views and data of special education teachers collected through the questionnaire were recorded and analyzed quantitatively by extracting the results of descriptive and inductive statistical analysis which were interpreted in order to answer the research questions asked by the researcher. The detailed presentation of the results takes place in the corresponding chapter of the research report.

3.6. Validity and Reliability Issues

In order for the results of a survey to be considered valid, the validity and reliability of the tools provided for data collection must first be checked. In the past, finding valid and reliable tools was difficult, so researchers created their own measuring instruments. In this case it was necessary to prove their validity and

reliability. Today, there are many weighted tools available for use by researchers which due to their repeated use have been re-evaluated and improved showing high validity and reliability [71].

Validity ensures that the tool used measures what it is intended to measure. On the other hand, reliability refers to the stability of the results if the measurement is repeated under the same conditions. The relationship between these two concepts is complex as the reliability of the measurements does not imply validity. But validity includes the concept of reliability [72].

In this research, the reliability and validity of the data collection tool has been ensured by the selection of the weighted, valid and reliable scale “The Teacher Efficacy to Implement Inclusive Practices” (TEIP) by Sharma, Loreman and Forlin [24], which has been granted in many published studies in the past. In addition, the internal reliability of the scale for this research was calculated using the SPSS statistical tool.

4. Data Analysis

4.1. Descriptive Analysis—Demographic Data

A total of 83 Special Education teachers participated in the present study. In the first part of the questionnaire, the demographic data of the participants were collected, which are analyzed in the following table of frequencies and are presented in the pie charts that follow. More specifically, out of the 83 teachers, 65 (78.3%) were women and 18 (21.7%) were men. Regarding their age, most of the participants were from 18 to 30 years old at a rate of 60.2% (N = 50) while only 7 were from 41 years old and over. Participants were then asked about their educational level where it emerged that 51 of them were at undergraduate level while 32 at postgraduate level. It was observed that none of the participants in this research was at the doctoral level. Finally, regarding their years of service, 53 (63.9%) had worked from 0 to 5 years, 19 (22.9%) from 6 to 10 years while the remaining 11 (13.3%) from 10 years and over.

4.2. Descriptive Analysis—Teacher Teaching Effectiveness Questionnaire

The scale of measuring didactic self-effectiveness in the application of inclusive practices applied in the school framework “The Teacher Efficacy to Implement Inclusive Practices” (TEIP) by Sharma, Loreman and Forlin [24] consists of a total of 18 statements that examine three key parameters regarding development and use of inclusive practices, inclusive teaching skills, the ability to work with parents and special education staff, and the ability to manage problem behaviors. Data were collected on a 6-point Likert scale from 1 (Strongly Disagree) to 6 (Strongly Agree).

More specifically, the first sub-scale consists of positions 1, 2, 3, 4, 5 and 6, the second consists of positions 7, 8, 8, 10, 11 and 12 and finally, the third sub-scale of positions 13, 14, 15, 16, 17 and 18 of the scale. The TEIP scale has been tested

for validity and reliability with reliability coefficients for each of the three factors: 1) skills in participatory teaching ($r = 0.93$), 2) effectiveness in behavior management ($r = 0.85$) and 3) efficiency in collaboration ($r = 0.85$). The overall reliability of the scale is ($r = 0.89$) [1].

5. Results

Internal Consistency Reliability Analysis with Cronbach's Index Alpha

Cronbach's index α helps to measure the internal consistency of a set of questions by calculating how reliably specific positions that have been pre-designed to describe and measure a complex phraseology, are said to do so satisfactorily [73]. It applies when scale questions are graded with more than two grades provided the questions are more than three in total [74] [75]. The values that this index can get are from 0 to 1 where the highest values imply high consistency while approaching 0 concludes low internal consistency in the questionnaire under study. More specifically, from $\alpha = 0.7$ according to the international literature, the high values of the specific internal cohesion index start, while the values from $\alpha = 0.6$ and above are accepted [76]. A lot of important additional information provided by the Cronbach's coefficient α is the value of an after subtracting each question of the questionnaire separately.

Research question 1

How do special education teachers evaluate the teaching effectiveness of inclusive teaching skills?

The mean value of the scale for inclusive teaching skills is equal to $M = 29.71$ (S. D. = 4.5) (Table 1). This value indicates that participants highly value their effectiveness in this area. The positions of the participants in the respective statements of the questionnaire are described in detail below and are summarized in Table 2.

To the question "Can I use various evaluation methods (Q.01)" most participants ($N = 75$) answered that they agree while only 8 disagreed with an average of answers $M = 4.92$ (*i.e.* s.d. = 1.062). With an average value of answers at $M = 5.57$ (s.d. = 0.719) in the next statement it is clear that all respondents judge that "they are able to provide an alternative explanation or an example when students are confused. (Q.02)". In the position "I feel confident about the planning of learning activities to meet the individual needs of children with SEN

Table 1. Descriptive scale analysis.

	Descriptive Measures		
	M (SD)	MD (IQR)	Cronbach α
Scale 01	29.71 (4.5)	31 (6)	0.806
Scale 02	28.12 (4.9)	29 (6)	0.865
Scale 03	31.48 (3.7)	33 (6)	0.782

Table 2. Inclusive teaching skills—description of answers.

	I absolutely disagree	Disagree	I disagree a little	I agree a little	Agree	Strongly Agree	M.O.	T.A.
Q.01	0	2	6	20	24	31	4.92	1.062
Q.02	0	0	0	11	14	58	5.57	0.719
Q.03	0	4	8	17	27	27	4.78	1.148
Q.04	0	5	8	14	40	16	4.65	1.087
Q.05	2	4	7	14	22	34	4.83	1.314
Q.06	0	2	5	12	39	25	4.96	0.956

(Q.03)” the average of the answers was $M = 4.78$ (*i.e.* = 1.148) as 12 participants stated that they disagree and 71 that they agree.

The next 2 questions of the scale move in the same pattern. The averages of the answers in the positions “I can accurately assess what my students have understood from what I have taught. (Q.04)” and “I can provide the appropriate learning challenges to the very capable students. (Q.05)”, 70 participants considered that they agree while only 13 disagreed with an average of answers $M = 4.65$ (T.A. = 1.087) for question 04 and $M = 4.83$ (T.A. = 1.314) for question 05. Finally, 76 Participants agree with the statement “I feel confident that I have the ability to direct students to work in pairs or small groups. (Q.06)” with an average of answers $M = 4.96$ (*i.e.* 0.956).

Research question 2

How do special education teachers evaluate the teaching effectiveness of problem behavior management?

The average value of the scale for the management of problem behavior is equal to $M = 28.12$ (T.A. = 4.9). This value indicates that participants highly value their effectiveness in this area. The positions of the participants in the respective statements of the questionnaire are described in detail below and are summarized in **Table 3**.

In the position “I feel confident about my ability to prevent annoying behavior before it happens in the classroom. (Q.07)” the average of the answers is $M = 4.48$ (T.A. = 1.086) as 67 participants stated that agree while 16 that disagree. In the question “Can I control the annoying behavior in the classroom (Q.08)”, 69 teachers agreed and 14 disagreed with the average of the answers being $M = 4.51$ (1.052). Continuing, 74 of the participants “are able to calm a student who makes a fuss” class. (Q.10) with an average of answers $M = 5.01$ (T.A. = 0.943). However, 21 participants did not “feel confident when confronted with students who use physical violence. (Q.11)” with the average of the answers being at the value $M = 4.41$ (T.A. = 1.279). Finally, in the position “I can make clear to the students my expectations for their behavior. (Q.12)” 75 people stated that they agree and only 8 that they disagree with an average of answers $M = 4.93$ (T.A. = 1.045).

Table 3. Problem behavior management ability—description of answers.

	I absolutely disagree	Disagree	I disagree a little	I agree a little	Agree	Strongly Agree	M.O.	T.A.
Q.07	0	4	12	21	32	14	4.48	1.086
Q.08	0	2	12	28	24	17	4.51	1.052
Q.09	0	2	7	16	40	18	4.78	0.963
Q.10	0	2	2	18	32	29	5.01	0.943
Q.11	2	2	17	23	17	22	4.41	1.279
Q.12	0	2	6	18	27	30	4.93	1.045

Research question 3

How do Special Education Teachers evaluate the teaching effectiveness of their collaboration with parents and special education staff?

The average value of the scale regarding the cooperation with the parents and the special educational staff is equal to $M = 31.48$ ($T.A. = 3.7$). This value indicates that participants highly value their effectiveness in this area. The positions of the participants in the respective statements of the questionnaire are described in detail below and are summarized in **Table 4**.

In this research question it seems that most of the participants agree with the corresponding statements in the questionnaire. In 3 of the 6 positions 82 of the participants stated that they agree while only one disagrees a little. Specifically, to the question “I have confidence in my ability to involve parents in school activities in which children with SEN and/or disability participate (Q.14)” the average of the answers was $M = 5.3$ ($T.A. = 0.728$), in the statement “I am able to work with other professionals and staff (eg assistants, special educators) to teach students with special educational needs in the classroom. (Q.15)” the average response is $M = 5.61$ ($T.A. = 0.641$) while in the position “Can I work with other professionals (eg special educators or speech therapists to design educational programs for students with SEN. (Q.17)” the answers are average $M = 5.52$ ($T.A. = 0.755$) Equally high average of answers ($M = 5.34$, $T.A. = 0.769$) has the question “behave to make parents feel comfortable coming to school. (Q.16)” as only 2 participants answered that they disagree while 81 agree. In the statement “I can support the families in how to help their children improve at school. (Q.13)” 74 of the teachers who participated in the research stated that they agree and 9 that they disagree ($M = 4.96$, $T.A. = 1.142$) while finally 75 participants “They feel confident that they have the ability to inform others who know little about the laws and policies regarding the integration of students with SEN (Q.18)” with an average of answers $M = 4.75$ ($s.d. = 1.124$).

Research question 4

Is there an effect of demographic factors of special education teachers (gender, age, work experience) on their views on their teaching self-efficacy?

Either parametric or non-parametric statistical criteria could be applied to investigate the fourth research question. Before deciding on this, a regularity test

Table 4. Ability to work with parents and special education staff—description of answers.

	I absolutely disagree	Disagree	I disagree a little	I agree a little	Agree	Strongly Agree	Mean (M)	Standard Deviation (s.d.).	Σ . Skewness	Σ . Kurtosis
Q.13	2	2	5	8	37	29	4.96	1.142	-1.59	2.777
Q.14	0	0	1	10	35	37	5.3	0.728	-0.73	-0.04
Q.15	0	0	1	4	21	57	5.61	0.641	-1.725	2.972
Q.16	0	0	2	9	31	41	5.34	0.769	-0.996	0.509
Q.17	0	0	1	10	17	55	5.52	0.755	-1.37	0.828
Q.18	2	0	6	27	22	26	4.75	1.124	-0.852	1.177

should be applied to the sub-scales of the self-efficacy variable and to each of the categories of demographics collected, gender, age, educational level and years of service.

Sex

In order to check if there is a statistically significant difference in inclusive teaching skills in relation to gender, the non-parametric Mann-Whitney test was applied as the assumption of the regularity of the values of the variables was not observed.

According to the results of this test, no statistically significant difference was found between the two groups, with $U_1 (65.18) = 545,500$ $p > 0.05$ for the scale 01, $U_2 (65.18) = 456,000$ $p > 0.05$ for scale 02 and $U_3 (65.18) = 517,500$ $p > 0.05$ for scale 03.

Educational level

Mann-Whitney non-parametric control was also applied for the variable “Educational level” if the assumption of regularity of the values of the variables was not met. While no statistically significant effect of educational level was found on the two scales of the questionnaire, the results show a significant difference in the values of scale 03 between the two groups with $U (65.18) = 541,000$, $p = 0.01$.

Ages-Years of service

Spearman correlation coefficient was applied for the variables “Age” and “Years of previous service”, if they are orderly and no normal distribution is followed (Table 5).

Age correlates positively, with the scale 3, $r_s (81) = 0.233$, $p < 0.05$. In addition, years of service appear to have a positive and strong effect on the three scales of the questionnaire, $r_s (81) = 0.375$, $p < 0.01$, $r_s (81) = 0.268$, $p < 0.01$ and $r_s (81) = 0.243$, $p < 0.01$.

Research question 5

Is there a correlation between the three sub-scales of teaching self-efficacy?

As it can be seen that scale 1 correlates positively and strongly with scale 2 ($r_s (81) = 0.673$, $p < 0.01$), scale 1 correlates positively and strongly with scale 3 ($r_s (81) = 0.488$, $p < 0.01$) and finally scale 2 is positively and strongly related to scale 3 ($r_s (81) = 0.552$, $p < 0.01$). The above results were expected as the three

Table 5. Regularity check—years of service.

	Age	Kolmogorov-Smirnova		Shapiro-Wilk	
		Statistic	Sig.	Statistic	Sig.
Scale 01	22 - 30	0.103	0.200*	0.964	0.127
	31 - 40	0.293	<0.001	0.774	<0.001
	41 and above	0.214	0.200*	0.832	0.083
Scale 02	22 - 30	0.105	0.200*	0.946	0.024
	31 - 40	0.285	<0.001	0.844	0.001
	41 and above	0.251	0.200*	0.852	0.129
Scale 03	22 - 30	0.123	0.056	0.934	0.008
	31 - 40	0.266	<0.001	0.793	<0.001
	41 and above	0.400	0.001	0.681	0.002

scales are part of a single questionnaire measuring self-efficacy with high reliability of internal consistency for all three scales.

6. Discussion

In the present study, the expected didactic self-effectiveness of special education teachers in the implementation of integration practices was studied. A two-part questionnaire was used for data collection. In the first part the researcher collected the demographic characteristics of the participants while in the second part the participants completed a weighted scale for measuring teaching self-efficacy [1]. The collected data were used to write the research report, answering the research questions asked by the researcher taking into account the existing literature.

A total of 83 special education teachers participated in the survey. Most of them were women, which may be due to the fact that more women choose the teaching profession than men [38]. Of course the specific composition of the sample regarding gender is found in most research in the literature. Indicatively, over 90% in the survey of Park *et al.*, [23] and over 70% in Savolainen research [13] were women. Similar analogies are also found in the research of Shaukat, Sharma & Furlonger [54] and Shaukat, Vishnumolakala & Al Bustami [55] who even study the effect of gender on didactic self-efficacy.

Most of the participants are at the undergraduate level but many of them have a postgraduate degree. Just over half were between 22 and 30 years old, which helped to explore the effect of work experience on their expectation of teaching self-efficacy. Specifically, 53 of the participants had work experience from 0 to 5 years, 19 from 6 to 10 and the remaining 11 from 11 years and over.

The results of the research gave interesting answers to the research questions that were asked by verifying or refuting the results of relevant research in the literature. Overall, participants seem to have a high expectation of didactic self-efficacy. In particular, in all three factors of self-efficacy studied, equally high

values were measured with a small deviation between the responses. The fact that the sample consists only of special education teachers may be related to and justify these results.

Special education teachers, as constantly confirmed by the literature, have a higher didactic self-efficacy in the implementation of integration practices than teachers who have experience only in formal, general education. In fact, special education teachers have a more positive attitude towards inclusive education but also in cooperation with other teachers [59] [60] [61] [62] [63].

The correlation between didactic self-efficacy and gender was first investigated. From this research it was found that there are no significant differences due to the gender of the participants in their expectation for didactic self-effectiveness in any of the three factors of the scale. These findings refute many of the researches found in the literature. The prevailing belief is that women have higher rates of didactic effectiveness than men, especially at the behavioral management scale [50]. In addition, female teachers in similar surveys differ in their expectation of effectiveness in relation to men in teaching students with disabilities while being more satisfied with their work [56] [57]. Certainly, there is strong evidence in the literature that the two sexes develop differently their expectations for this teaching effectiveness [51]. These indications are not supported by the results obtained.

Of course, there are research findings that agree with the present research. In the research of Emam & Al-Mahdy [48] although some gender differences were found in the results, it was observed that gender was not related to the scale of problem management. Also in Loreman's studies [24] and Tejeda-Delgado [56] observe similar findings with the present research as no difference was found in the results of teachers related to their gender.

Regarding the educational level of the participants, no significant correlation was found with the first two scales of the questionnaire. But it seems to be related to the third scale that studies the ability of teachers to work with parents and special support staff. These findings confirm previous research in which it was found that increasing education leads to a proportional increase in teaching self-efficacy. More specifically, a tendency of teachers to cooperate better with each other was observed, a fact that is confirmed by the present study [64] [65].

In the same research, work experience seems to play an important role in teachers' teaching self-efficacy. As mentioned in the literature review, experience is the main source of self-efficacy. The results of the present study confirm the theory since a strong correlation of work experience was found with all three scales of the questionnaire. Of course, while mainly in the previous researches that have been carried out a correlation was found between the two variables, this correlation was not always positive as in the specific research. There is evidence that work experience is inversely proportional to this teaching effectiveness which means that as experience increases self-efficacy decreases [52] [53]. In the same vein, younger, inexperienced teachers were more positive in their

views on integration but found it particularly difficult to manage problematic classroom behaviors and to work with parents and support staff. In contrast, they had high scores on the inclusive teaching skills scale [23] [54] [55]. Therefore, the present study confirms the correlation of experience with didactic self-effectiveness, but the results differ in the direction of this relationship compared to other previous studies.

The age of the participants in the present study is related to the third scale of the questionnaire that examines the self-efficacy of teachers in working with parents and special support staff. As mentioned before, the Park's investigation is confirmed [23] in which it was found that younger teachers find it difficult to work with other teachers and parents.

7. Conclusion

The vision of inclusive and inclusive education is going to occupy the educational and research community for a long time. The main goal of the whole project is the integration of people with special educational needs in school and consequently in society. Familiarization of children in general schools with diversity should become a priority of educational policy as they are the future adults who will be called to coexist harmoniously and give opportunities for integration to people with physical or mental disabilities, with different cultures or different languages. However, inclusive education does not only benefit "non-formal" students, but also benefits all children equally. Every person has different abilities and different weaknesses. In the context of integration, the strengths are exploited and the weaknesses are addressed if the teaching is adapted individually.

8. Research Restrictions

The present research clearly had some limitations. The main limitations concern the sample size and quality. In order for the results to be generalized to the population the sampling is preferably probabilistic and the sample size representative of the general population. In this research, there was no such possibility from the researcher. On the one hand, there was no access to the entire population to be able to use random sampling. On the other hand, the restrictions that still exist during the collection of data due to the pandemic of (Sars) Covid-19 led to the electronic completion of the questionnaires since there was no access to schools [75] [76].

9. Future Extensions

Given the limitations of the present research process and based on the literature, some suggestions for future research emerge. Initially, it would be interesting to investigate with the method of triangulation the factors that significantly affect the teaching self-efficacy of teachers in Greece and the readiness of graduate teachers in relation to teaching self-efficacy.

The weighted scales lead to a safe generalization of the results, but through the

qualitative research, there is a greater deepening in the subject under study. Teachers' views have been studied in many countries and reported differences in results across countries. Educational policies in inclusive education and the implementation of these policies vary widely from country to country [62].

In addition, the literature review provided some suggestions to take this research one step further. More demographics could be added as a starting point, such as the educational background of the teachers and the disability they have come into contact with at a professional level, and it could be explored whether the individual's teaching accession practices from the existence of a person with a disability in the immediate environment.

Conflicts of Interest

The author declares no conflicts of interest.

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