

THE SPECIALIZED TRAINING OF TEACHERS: THE ROLE OF SELF-EFFICACY IN SECONDARY EDUCATION LEVELS¹

LA FORMAZIONE SPECIALISTICA DEI DOCENTI: IL RUOLO DELL'AUTOEFFICACIA NEI LIVELLI DI INSEGNAMENTO SECONDARIO

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ABSTRACT

This paper shows the preliminary results and implications of a descriptive survey conducted on a sample of 256 teachers attending a SEN course, who completed the SAED (Biasi et al., 2014) at the beginning of the training. The average self-efficacy profiles of the teacher attending the training for first grade secondary school and of those attending the training for second grade secondary school are compared. These data will be the basis for determining the effects of training on self-efficacy.

Il contributo illustra i risultati preliminari e le implicazioni di un'indagine descrittiva condotta su un campione di 256 docenti impegnanti in un corso di specializzazione per il sostegno invitati a compilare la SAED (Biasi et al., 2014) all'inizio della formazione. Sono comparati i profili medi di autoefficacia dei docenti in formazione per la scuola secondaria di primo e di secondo grado.

I dati costituiranno la base per la verifica degli effetti della formazione sull'autoefficacia.

KEYWORDS

Self-efficacy, Training, Support teachers, SAED average profiles, Secondary school.

Autoefficacia, Formazione, Docenti di sostegno, Profili medi SAED, Scuola secondaria.

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Introduction

Numerous studies have analyzed the strategic function of teacher self-efficacy in promoting inclusive attitudes, particularly toward students with special educational needs, and in fostering a positive classroom climate (Weisel & Dror 2006; Sharma, Loreman, & Forlin 2012; Germani & Leone, 2022). Especially for support teachers, self-efficacy is a central element in promoting their ability to relate to students with special educational needs; for this reason, it is important that teacher training programs take this element into account.

This paper is part of a more extensive study investigating the effectiveness of support training programs, and its aim is to present and discuss the preliminary results of a descriptive study conducted on a sample of 256 teachers attending a special education need (SEN) course, who were asked to respond to the Self-Efficacy Scale at the beginning of the training (Biasi et al., 2014).

In the next sections, we will focus on the relationship between the training of support teachers and the construct of self-efficacy, focusing on both historical-theoretical aspects and practical-educational implications. We will review some studies conducted nationally and internationally on the role of self-efficacy in teachers' training, and then describe in more detail the evidence relating to the sample investigated.

1. The training of the teacher specialized in support

Nowadays and especially in Italy, the training of teachers assumes a primary importance in the construction of a school system that allows teachers to acquire the skills necessary to meet the specific needs of each student (Cottini, 2004; D'Alonzo, 2006).

Indeed, evaluating the teacher's inclusive attitude helps to further qualify specialist training courses for support, as it allows paying attention to teaching practices, beliefs, prejudices and perceptions of discomfort concerning the role and the behaviors implemented.

In our country, each university has the possibility of modulating its educational offer thanks to its teaching autonomy, and thus to include among its postgraduate courses specialized training courses for the educational support activity for students with disabilities.

Furthermore, these paths are part of a historical-normative framework in which attention to the needs of students with disabilities has become not only a constant

but a substantial necessity, with the right to education of people with disabilities gradually maturing, shifting its focus of interest from a logic of exclusion to a logic of inclusion (Canevaro, 2007; Crispiani, 2016).

Almost thirty years after the Salamanca Declaration (UNESCO, 1994), inclusion in the educational field continues to attract great attention (Graham et al., 2020): the post-pandemic scenario and the critical issues experienced by the educational systems in this period exacerbated this interest, leading research to focus on the structuring of a qualitatively valid, equitable and inclusive school system (United Nations, 2021).

Before arriving at today's situation, the Italian school reality, in terms of inclusion, has experienced several seasons.

Initially, we concentrated on organizational, structural and methodological solutions, whose terms of reference were joint teaching planning, and individualization of languages and methods.

Subsequently, the "recognition of each one" paradigm emerged, abandoning the philosophy of inclusion in favor of the principle of inclusion, to promote a multiplicity of "integrations" in a context of "special normality" (D'Alonzo, 2004; lanes, 2006).

The inclusive logic, following the bio-psycho-social model of the International Classification of Functioning, Disability and Health (ICF) – World Health Organization (WHO) international classification, 2001– is based on the idea of recognizing and valuing the differences of all students to encourage their participation in educational-training and relational activities.

Accordingly, diversity is now considered as a possibility of comparison and above all as an opportunity for individual and collective enrichment.

In fact, a reliable picture of the research on the topic of inclusion cannot be drawn without considering how the training of the specialized teacher can influence the improvement of inclusive processes (Pavone, 2004; 2007; D'Alonzo, 2006; Canevaro et al., 2011; lanes , 2014).

The training of specialized teachers, therefore, appears to be a priority in the creation of a fair school system, in which teachers can acquire the necessary skills to respond appropriately to the different needs of students, guaranteeing quality training and enhancing their potential through a personalized educational path (Donnelly, 2011).

At this point, regarding the attitudes and practices of teachers in inclusive contexts, it is important to examine the Inclusive Practice Project (Beacham & Rouse, 2012), which is based on the idea that specific beliefs, behaviors, and attitudes can enhance an inclusive climate within the classroom, or the Profile of inclusive

teachers proposed by the European Agency for Development in Special Needs Education (Watkins, 2012) which highlights the importance of valuing diversity and emphasizes the relevance of teachers' continuous training.

At an international level, the emphasis is on the fact that specialized training aimed at promoting and developing essential skills for the implementation of inclusive practices is a culprit requisite for the teacher of the future (European Agency, 2021; European Council, 2020).

The recent monitoring report, *Inclusion and education: All means all* (UNESCO, 2020) deals with the attitudes of teachers towards inclusion, highlighting the fact that promoting inclusion means recognizing and accepting the experiences and abilities of each student.

Teachers' attitudes towards inclusion, therefore, represent a fundamental variable for the success of inclusive processes, and specific ongoing training on the issues of inclusion and disability will be essential for the promotion of teachers' positive attitudes leading to more effective inclusive teaching (Sharma, 2012).

According to Ajzen's Theory of Planned Behavior (1991), the attitude (that is, the tendency to respond favorably or unfavorably to an object, a person or an event) is one of the essential components to implement a certain behavior.

Specifically, teachers' attitudes towards inclusion mainly refer to beliefs and feelings regarding pupils with disabilities and special educational needs (Avramidis & Norwich, 2002), representing a key variable for the success of inclusive processes (Ianes et al., 2010; Loreman et al, 2007).

2. Teacher's self-efficacy in training context

To fully understand the concept of self-efficacy, one must start from a preliminary operation: the analysis of humans' profound need to control situations.

Since its origins, human beings have always been characterized by a strong and constant desire to control life's events, because controlling means predicting and predicting means being able to adopt effective behavioral strategies to favor the best possible adaptation.

The development of knowledge, over the centuries, has exponentially increased man's possibilities of predicting events and exercising control over them, and with the adoption of the experimental method in the psychological sciences the interest in the analysis of causal relationships between events has increased even in this field.

Many theoretical approaches have sought to uncover scientific principles related to how environmental influences are structured and how cognitive activities are

employed to promote human adaptation and change, but it is with Bandura (1977) and his socio-cognitive model that a synthesis has been reached.

The socio-cognitive paradigm supports the principle according to which people, despite interindividual differences, can analyze events and reflect on them, and hence are able to self-regulate at a behavioral level, exercising some form of control over the situations that they experience or will likely experience in the future (Bandura, 1982).

If people exert their influence on situations, this means that they can contribute to causing a given event, but they obviously cannot determine it completely, as the individual intentionally performs a certain action motivated by a specific purpose, while its effects are not always predictable or controllable.

Studies on self-efficacy in the educational context recently shifted their focus, dedicating a greater emphasis to the figure of the teacher.

In an attempt to arrive at a certain degree of clarification of the construct of teacher effectiveness, many scholars have tried to give a more accurate definition of this construct: some state that effectiveness is The measure in which the teacher believes he has the ability to influence pupils' performance (Berman et al., 1977); alternatively, effectiveness has been identified as The belief of teachers that they can influence the learning of students, even those who may be difficult or demotivated (Guskey & Passaro, 1994); finally, it has also been defined as The belief in the teacher's ability to organize and execute the course of action necessary to successfully accomplish a specific learning task in a particular context (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998).

Furthermore, many researchers (Gibson & Dembo, 1984; Saklofske et al. 1988) over time have developed models that allow for a precise and complete vision of the construct of teacher effectiveness.

Gibson and Dembo (1984), for example, studied how teachers with high or low self-perceived effectiveness manage their activities in the classroom. It has been noted that teachers who possessed a high sense of effectiveness dedicated their time to purely scholastic activities, were a support for students in difficulty and a source of gratification for those who experienced academic success. Conversely, teachers with low levels of effectiveness dedicated most of their time to tasks that were not exactly "scholastic", did not know how to support students with difficulty and, indeed, criticized those who failed in the assigned task.

Other studies (Melby, 1995; Chong et al., 2010; Borgogni, 2001) have demonstrated the importance of teachers' sense of effectiveness in learning, concluding that teachers who perceive themselves as effective are more likely to foster better

students' results, are more motivated, and are more capable of enforcing rules (Wittrock, 1986).

Melby (1995) also highlighted the fact that teachers with a low sense of effectiveness are more stressed and less confident in the progress of the class, and for this reason they mainly focus on punitive strategies to obtain discipline and are not interested in verifying the real learning of the class, but only to impart as many notions as possible. Conversely, teachers with a high sense of effectiveness tend to reflect on the motivations behind the behaviors and repudiate authoritarianism in favor of persuasion.

Chong et al. (2010) underline that a teacher with a high sense of effectiveness can intervene in the management of the classroom; accordingly, Borgogni (2001) points out that this type of teacher is mainly successful with difficult children, and usually knows how to win the trust of families and the headteacher and to take advantage of technological innovations.

Recent psychological research (Biasi et. al., 2014) has focused in particular on the analysis of the motivational components supporting teachers' self-efficacy, stating that good motivation at work is closely linked to the ability to cope with stressors and difficulties typical of the educational context.

The same authors empirically demonstrated through the use of a scale for measuring self-efficacy (Biasi & Domenici, 2013) and a self-report instrument measuring motivational levels (Biasi & Bonaiuto, 2014) that teachers with high levels of self-efficacy obtain high scores in the motivations for Sociality, Knowledge, and Construction as well as in the Perception of the aesthetic experience and the experience of the flow or optimal experience, according to a direct linearity model. Conversely, in subjects with lower levels of self-efficacy, systematically lower scores were observed, in particular in the domains of aesthetic perception and in the experience of flow; on the contrary, higher scores were found in these subjects in the motivations for self-affirmation and in particular in the motivation for aggression, both indicators of indirect effects of a probably more self-centred and intolerant personality, therefore less suitable for carrying out the role of teacher (Biasi et al., 2014).

The empirical and theoretical evidence summarized so far highlights the extreme importance of the construct of self-efficacy in the teaching profession is highlighted. The beliefs that teachers have about their self-efficacy influence not only the way they work, but above all, affect students' learning and sense of self-efficacy.

3. Instrument and procedure

Students of a SEN course activated at Unicamillus University – International University of Health Sciences in Rome – directed by G. Domenici – were asked to participate in an online survey conducted at the beginning of the training activities, in the period December 2022-January 2023. The students who agreed to take part answered an online questionnaire on the Google Forms platform made available through a link disseminated by the course secretariat, with confidentiality and anonymity assurances.

The questionnaire was structured in three sections: the first was aimed at collecting socio-demographic information (gender and age) and previous teaching experiences. Specifically, the trainee teachers were asked to indicate whether they had had teaching experience – and if so, for how long –, whether they had taken part in previous training opportunities focused on support, their subject area of reference, and the SEN course attended (whether for lower secondary or upper secondary school). The second section of the questionnaire was aimed at collecting information on teachers' attitudes towards disability and inclusive processes. The third and final section – which will be the focus of the present paper – envisaged the use of the Italian Teacher Self-Efficacy Scale (SAED; Biasi, Domenici, Capobianco & Patrizi, 2014) to assess teachers' perceptions of their self-efficacy at the beginning of the training. Specifically, the SAED evaluates teachers' perceptions of their abilities in performing teaching activities in specific contexts (Tschannen-Moran, Hoy & Hoy, 1998).

The SAED was adapted into Italian by Biasi and collaborators (2014) from Tschannen-Moran & Hoy's (2001) Teacher Self-Efficacy scale and consists of 24 items through which teachers are invited to indicate, on a 9-step response scale (from 1 "Nothing" to 9 "Very much"), the degree to which they feel able to act with respect to some specific situations that may occur in the context of school activities. The instrument allows to obtain a total self-efficacy score and specific scores for the following three subscales, each consisting of 8 items:

- Efficacy for Student Engagement: assess the extent to which teachers feel they are able to stimulate and motivate students (item example: "How much can you do to motivate students who show low interest in schoolwork?"; "How much can you do to get students to believe they can do well in schoolwork?");
- Efficacy for Instructional Strategies: investigate the extent to which teachers feel able to employ different teaching strategies in their teaching activities (item example: "How much can you do to adjust your lessons to the proper level for individual students?");

- **Efficacy for Classroom Management:** to evaluate the extent to which teachers feel able to handle interaction with problematic students (item example: “How much can you do to control disruptive behaviour in the classroom?”).

The SAED was validated on a sample of 200 primary, lower secondary, and upper secondary school teachers and showed good psychometric properties in terms of reliability and factorial structure (Biasi et al., 2014).

4. Statistical analyses

Statistical analyses were conducted using IBM SPSS software (version 25.0). Descriptive statistics were obtained to explore the characteristics of the analyzed sample. Means and standard deviations were calculated to investigate the scores obtained on the SAED and the three subscales. Differences between groups (for gender, teaching discipline, specialization course attended, and between teachers with and without teaching experience and/or previous training in support teaching) were investigated with Student’s t test for independent samples; p values below 0.05 were considered statistically significant. A two-step cluster analysis was conducted to identify different subgroups of teachers based on self-efficacy levels.

5. Results

5.1 Participants’ Characteristics

A total of 256 teachers-in-training (mean age: 37.8 ± 8.2 , age range: 20-63, 186 women and 70 men) took part to the survey. The mean age of women (37 years and 9 months) was similar to that of men (37 years and 5 months).

Concerning previous teaching experiences, 183 trainees (71.5%) reported previous teaching experience for less than 10 years ($n=173$; 67.6%); only 10 subjects (3.9%) reported longer teaching experiences (11-20 years), while 73 teachers (28.5%) declared they had no experience.

Regarding previous training on support or previous teaching experience as a support teacher, 144 teachers (56.3%) reported having no previous experience, while 112 (43.8%) had already participated in training opportunities dedicated to the support or had already taught in this area.

Concerning the specialization course attended, 124 teachers (48.4%) were attending the course for the lower secondary school and 132 (51.6%) were attending the course for the upper secondary school (Tab. 1 shows the main descriptive statistics).

Finally, pertaining to the subject area of reference, the majority of teachers reported teaching subjects in the scientific-technological-professional area (57.3%) and in the humanistic-linguistic area (36.1%).

Variables	N (%)	Mean (SD)
Gender		
Male	70 (27,3%)	
Female	186 (72,7%)	
Age		37,8 (8,22)
Minimum		20
Maximum		63
Previous teaching experience		
Yes	183 (71,5%)	
No	73 (28,5%)	
Previous teaching experience on disability		
Yes	112 (43,8%)	
No	144 (56,3%)	
Year of teaching		
No one	73 (28,5%)	
0-10	173 (67,6%)	
11-20	10 (3,9%)	
Specialization course attended		
Lower secondary school	124 (48,4%)	
Upper secondary school	132 (51,6%)	
Disciplinary area		
Science-technology-professional area	146 (57,3%)	
Humanistic-linguistic area	92 (36,1%)	
Support	12 (4,7%)	
Other	5 (2%)	

Table 1. Participants' characteristics (N=256)

5.2 Self-efficacy levels

Concerning the scores obtained by teachers in the three dimensions of Self-efficacy and the SAED total score, Table 2 shows mean scale scores with score ranges and Cronbach's alpha values to assess the internal consistency of each subscale.

As can be seen from Table 2, the self-efficacy values seem quite high, partly overlapping with those reported in a study conducted at the beginning of training on teachers who had attended the SEN course the previous year (Domenici, Biasi, Wolf & De Vincenzo, 2022). Overall, in this survey the teachers-in-training

seemingly felt able to adequately involve students, employ different teaching strategies depending on the context and situation, and manage the class even in the presence of problematic pupils.

The reliability values of the three scales of the questionnaire were excellent, as those reported in the original validation study of the Italian version (Biasi et al., 2014).

Variables	Mean (SD)	Range	Cronbach Alpha
Self-Efficacy for Student Engagement	7,82 (1,01)	1-9	0,92
Self-Efficacy for Instructional Strategies	7,67 (1,09)	1-9	0,94
Self-Efficacy for Classroom Management	7,50 (1,08)	1-9	0,93
Complete Questionnaire	7,66 (1,02)	1-9	0,97

Table 2. Self-efficacy mean and standard deviation

5.3 Differences between groups

Differences in self-efficacy scores were explored with respect to gender, prior teaching experience, and specific training in support teaching, specialization course attended, and subject area of reference by applying Student's t-test for independent samples.

Regarding gender, significant differences were observed between men and women in two specific dimensions of Self-Efficacy, i.e. Self-Efficacy for Student Engagement ($t=-2.299$; $p<0.05$), Self-Efficacy for Instructional Strategies ($t=-2.183$; $p<0.05$), and in the total self-efficacy score ($t=-2.049$; $p<0.05$), with women reporting higher scores than men (see Table 3).

Variables	Male (n=70)	Female (n=186)	t
Self-Efficacy for Student Engagement	7,59 (1,12)	7,91 (0,96)	-2,299*
Self-Efficacy for Instructional Strategies	7,42 (1,20)	7,76 (1,04)	-2,183*
Self-Efficacy for Classroom Management	7,34 (1,14)	7,56 (1,06)	-1,465
Complete Questionnaire	7,45 (1,12)	7,74 (0,98)	-2,049*

Table 3. Gender differences in self-efficacy

Concerning the specialization course attended, there were significant differences between trainee teachers enrolled in the lower secondary course and trainee teachers enrolled in the upper secondary course in the dimensions of Self-Efficacy

for Student Engagement ($t=2.271$; $p<0.05$), Self-Efficacy for Instructional Strategies ($t=2,259$; $p<0.05$), and in the total self-efficacy score ($t=1,987$; $p<0.05$), with teachers attending the training for lower secondary course reporting higher self-efficacy scores than those attending the training for upper secondary course (see Tab. 4).

Variables	Lower secondary course (n=124)	Upper secondary course (n=132)	t
Self-Efficacy for Student Engagement	7,97 (0,87)	7,68 (1,12)	2,271*
Self-Efficacy for Instructional Strategies	7,82 (0,96)	7,52 (1,19)	2,259*
Self-Efficacy for Classroom Management	7,58 (1,01)	7,42 (1,14)	1,237
Complete Questionnaire	7,79 (0,90)	7,54 (1,11)	1,987*

Table 4. Course attended differences in self-efficacy

In contrast, with regard to previous teaching experiences, support training and disciplinary area, no differences were found in any of the dimensions of self-efficacy.

5.4 Classification of self-efficacy profiles

A two-step cluster analysis was conducted to identify differential profiles of self-efficacy. The three self-efficacy subscales were used as clustering variables and the goodness-of-fit of the clusters was assessed with the Average Silhouette Coefficient (ASC), considering values greater than 0.2 as indicative of a fair fit (Rousseeuw & Silhouettes, 1987; Sarstedt & Mooi, 2019). The logarithm of likelihood was used as similarity measure and the Bayes Information Criterion (BIC) as a method for the constitution of the clusters. Differences between clusters were investigated with a one-way analysis of variance (ANOVA) and Hochberg's GT2 post hoc test to account for the different numerosity between clusters.

The automatic clustering solution provided by the software consisted of four clusters with an ASC of 0.6. However, different configurations were explored, and eventually a more parsimonious and interpretable three-cluster solution was chosen since it showed an equal fit in comparison with the four-cluster solution and appeared more in line with the sample's characteristics.

Thus, the two-step analysis revealed the presence of three different clusters, named “**low self-efficacy**”, “**medium self-efficacy**”, and “**high self-efficacy**”. The ANOVA showed statistically significant differences between the clusters in self-efficacy scores (see Table 5).

Variables	Cluster 1 (n=22) M (SD)	Cluster 2 (n=102) M (SD)	Cluster 3 (n=132) M (SD)	F	Post-hoc
Self-Efficacy for Student Engagement	5,56 (0,81)	7,35 (0,45)	8,56 (0,39)	481,44**	1:2; 1:3; 2:3
Self-Efficacy for Instructional Strategies	5,29 (0,88)	7,15 (0,49)	8,46 (0,48)	421,65**	1:2; 1:3; 2:3
Self-Efficacy for Classroom Management	5,21 (0,71)	6,99 (0,46)	8,27 (0,58)	360,80**	1:2; 1:3; 2:3

Table 5. Cluster analysis results

As can be seen, the three clusters differed significantly from each other in self-efficacy scores. It is noteworthy that, although the mean scores in the self-efficacy dimensions are rather high in the investigated sample, three different clusters were identified.

The first, the most interesting and the one to focus on, is the “low self-efficacy” cluster, which includes a minority of trainee teachers (n=22), and which is characterized by lower scores in perceived self-efficacy in engaging students, employing different teaching strategies, and classroom management; the second cluster includes the trainee teachers with “medium self-efficacy” (n=102) and is characterized by intermediate levels of self-efficacy; the last cluster, the “high self-efficacy” (n=132), consists of teachers with higher self-efficacy scores.

Conclusions

This paper outlined the preliminary results of a study conducted on a sample of 256 teachers attending a SEN course, describing their characteristics and reported

levels of self-efficacy at the beginning of their training. In particular, the results highlighted that the trainee teachers reported fairly high levels of perceived self-efficacy in their ability to engage students, adapt teaching strategies to the context, and manage the classroom, in line with a previous study conducted on students attending the same SEN course in the previous year (Domenici et al., 2022).

Some gender differences were observed in the self-efficacy subscales; in particular, women seem to feel more effective in engaging students, in adapting teaching strategies to the context, and in total self-efficacy in general.

Differences concerning the specialization course attended were also observed: students who attended the lower secondary course reported feeling more effective in total self-efficacy and in the ability to engage students and adapt teaching strategies. This last finding seems particularly interesting and worthy of further study: a possible interpretation can be identified in the lack of an effective psychopedagogical training suitable for upper secondary school teachers to manage the educational problems of students.

Although rather high levels in all the dimensions of self-efficacy were observed in our sample, three heterogeneous groups with different scores' configurations were identified with cluster analysis. In the future investigation of the changes in self-efficacy after the completion of the training, it might be interesting to explore whether different trends can be identified for the three clusters, with particular emphasis on the group showing low perceived self-efficacy.

Overall, the findings of this preliminary study and the literature reviewed so far remark the culprit role of teacher self-efficacy in promoting school inclusion and consequently its positive repercussions on students' learning. Consistently, it would be desirable that future training programs focus more precisely on this aspect, and further research investigating their outcomes is warranted.

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