



The perceptions of pre and in-service teachers' self-efficacy regarding inclusive practices: A systematised review¹

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Abstract. This study fundamental purpose is to explore pre and in-service teachers' perceptions of self-efficacy regarding inclusive practices, as assessed through employing the TEIP (Teacher Efficacy for Inclusive Practices) scale. This study was conducted by means of a systematised review. As pre- and in-service teachers' self-efficacy can influence the quality of inclusive education, the researcher investigated studies that have addressed this issue in-depth. Eight databases were searched during this study, and 24 peer reviewed articles in which the TEIP scale was used, from 2012 to 2018, were selected for inclusion. The perceptions of pre- and in-service teachers' self-efficacy towards inclusive education were examined through using the TEIP scale's three sub-dimensions. The results show that the perceptions of pre- and in-service teachers' self-efficacy towards inclusive education are associated with teachers' field experience, age of teacher, level currently teaching, length of training, knowledge of local legislation, confidence in teaching significant interaction with disabled students, gender, level of education, different countries' perspectives, attitude and subject major.

Keywords: Inclusive practices, pre-service teacher, in-service teacher, self-efficacy

Received: 31.10.2019

Accepted: 26.11.2019

Published: 15.03.2020

INTRODUCTION

Inclusion practice is based on the reality that all children vary in a number of aspects which is not restricted to their handicap and that educational institutions have to adapt their practices according to the children's needs (Kinsella and Senior, 2008; Oliver, 1990). The perspective of inclusion suggests that if a student encounters a challenge, it is related to school practices rather than the child as there are many schools that aim to meet student needs. Implementation of inclusive education requires effort and meaningful improvements in the manner in which teachers practise teaching in the classroom. Inclusive education does not only mean that children who have learning difficulties take lessons in normal education classes. Researchers state that placement is only one aspect of inclusion (Winter, 2006). It is related to the feature of school experience, as well as to what degree students are supported to achieve at school life (DfES, 2004, p12).

Teacher training based programmes are responsible for equipping novice teachers with skills and knowledge to include all students irrespective of individual differences (Winter, 2006). One of the effective ways to determine if pre-service instructors are ready to encounter this hardship is to inquire their conceived self-efficacy to represent inclusive applications.

For Bandura (1997), instructors' conceived efficiency impacts not only the surrounding that instructors generate for the learners but also their evaluations as regards to the multiple teaching approaches they might adopt to enhance student learning. Within the framework of this inclusive teaching scheme, an instructor with higher self-efficacy in representing mainstreaming applications would assume that children with specific requirements might be

¹ This study was produced from the master thesis prepared by the first author under the supervision of the second author.

efficaciously taught in an arranged classroom, compared to a teacher with poor self-efficacy towards inclusive education. This theory indicates that teachers' perceptions of competence are closely related to their attitudes and behaviours towards students with special needs (Tschannen-Moran, Hoy and Hoy, 1998). Gibson and Dembo (1984) stated that there is a significant difference between the teaching applications of high productive and low productive instructors. Teachers who have perceptions of high self-efficacy tend to persist with unsuccessful students and use more effective teaching strategies (e.g. more tolerant with false responses, better questioning) that help such low-achieving students to learn more functionally. Instructors having low self-efficacy, on the other hand, tend to spend more effort on non-academic practices and use less efficient teaching strategies, which can restrict student learning. Some other researchers in the related field have also seen that instructors with high self-efficacy are inclined to employ more practical teaching methods (Chan, 2008) and humanistic approaches (Woolfolk Hoy, Rosoff and Hoy, 1990). Thus, the teacher with high efficacy might be considered as an important component necessary to form brilliant inclusive classroom settings. A few researchers have pointed out that it is unlikely for the education reforms to be successful unless they address teacher efficacy (DeMesquita and Drake, 1994; Sarason, 1990).

The efficiency of instructors is also based on the improvements of the approaches to instructing in inclusive settings. In a previous detailed study about anticipating instructors' approaches to inclusion, Soodak, Podell and Lehman (1998) hinted on instructors' self-efficacy as one of the most dominant anticipators of instructors' approaches to inclusion. It was also understood that instructors with poor self-efficacy showed anxiety and were reluctant to include learners with specific requirements. Similarly, Weisel and Dror (2006) inquired the school organization impact, educational climate, and the perception of self-efficacy by using the Teacher Efficacy scale on teachers' attitudes. The researchers discovered that the conception of instructor self-efficacy was the single best predictor of their attitudes regarding inclusion. Furthermore, instructors who conceived a more positive school atmosphere which entails qualities such as complementary leadership, cooperative planning and self-determination are more likely to develop more positive approaches to inclusion. Almog and Shechtman (2007) found out that there were positive relationships between instructors' democracy perceptions, efficacy, and strategies to cope with learners who show behavioural matters. Many studies, such as Sharma, Forlin and Loreman (2008), Forlin, Loreman, Sharma and Earle (2009) and Sharma, Moore and Sonawane (2009) have investigated the many variables that affect pre-service teachers' positive attitudes towards inclusive practices. These variables include the frequency of communication with students with disabilities, information about the local rules and policies, and esteem level. The researchers highlighted that esteem in instructing in inclusive settings to be the sole best predictor of participants' attitudes.

Studies in different specialization areas have demonstrated that self-perceptions of individuals' confidence and competence facilitate the link between the training received and how the practitioners utilize the currently attained knowledge and skills (Das, Gichuru and Singh, 2013; Leyser, Zeiger and Romi, 2011). Previous research also indicates that teachers' self-efficacy towards inclusion affects learners' success and attitudes, instructors' approaches and their classroom leadership competency (to a great extent) (Ahsan, Sharma and Deppeler, 2012; Gibson and Dembo, 1984; Tschannen-Moran and Hoy, 2001). Recent studies have shown mixed results in terms of the levels of teacher's efficacy beliefs, with both high (e.g. Savolainen, Engelbrecht, Nel and Malinen, 2012; Shaukat, Sharma and Furlonger, 2013) and low levels of efficacy being reported (e.g. Yada and Savolainen, 2017).

Teacher self-efficacy affects the type of setting that instructors generate for the learners, besides the types of instructional strategies they employ in the classroom (Bandura, 1997). It is more probable for teachers having much self-efficiency to create environments that increase learning for all students, spend more time on instruction, and give more assistance when dealing with students (Holzberger, Philipp and Kinter, 2013), all of which are components which are needed for successful inclusion (Guo, Dynia, Pelatti and Justice, 2014; Malinen, Savolainen and Xu, 2012; Savolainen et al., 2012). As the place of teacher productivity has been discovered to be a significant element in successful inclusion settings (Guo et al., 2014;

Savolainen et al., 2012; Malinen et al., 2012), it is crucial to investigate further how to promote teachers' self-efficacy when it comes to preparing teachers for success in inclusive classrooms.

The problem is that although teachers' self-efficacy beliefs have been related to positive student outcomes (Ying, Connor, Yanyun, Roehrig and Morrison, 2012) and teacher effectiveness (Gibbs and Powell, 2012), there is still a gap in our understanding of how self-efficacy is built in teachers, and it is necessary that all teachers are prepared to teach and accommodate special needs students in their classrooms (Causton-Theoharis, Theoharis, Orsati, and Cosier, 2011). High teacher self-efficacy levels are a meaningful element for all teachers to have, whether they teach special education or general education (Lee, Patterson and Vega, 2011). The specific problem is that the success of general education teachers regarding inclusive practices may be low. As teachers do not have sufficient self-efficacy levels to provide the success of such a programme (McCray and McHatton, 2011), the inclusion setting is unsuccessful. As a result, students with special needs might not benefit academically in an inclusive educational setting (Sharma, Loreman and Forlin, 2012).

Inclusive education has become an important trend in recent years. Many developed countries such as the United States of America, the United Kingdom, Australia and Canada have legislation underlining the importance of inclusive education practices for instructing learners with different requirements in classrooms. Likewise, a number of progressing countries have developed legislations which aid the wider principles of inclusive teaching to equip pupils with specific needs (Kuyini and Desai, 2007; Wu-Tien, Ashman and Yong-Wook, 2008). This transformation in students' needs at the classroom level during this time period has also made it a necessity for higher education to alter their instructor education methods (Nougaret, Scruggs and Mastropieri, 2005).

In the current project, pre- and in-service teachers' perceptions of self-efficacy towards mainstreaming practices and the factors which influence them will be investigated through a systematised review. It is anticipated that this research - in the context of the presented and discussed data - will be useful in directing future research and providing information about in-service training programmes.

In this dissertation, the aim is to investigate systematically the self-efficacy of teachers and teacher candidates (undergoing initial teacher education) in mainstreaming practices using the TEIP scale (Sharma et al., 2012). The review will examine the following research questions:

1-What is the level of self-efficacy perceptions of pre-service teachers with regards to inclusive practices?

2-What is the level of self-efficacy perceptions of teachers with regards to inclusive practices?

3-What are the variables that determine the self-efficacy of in-service and pre-service teachers in inclusive practices?

METHODS

Scientific Procedure

A systematic review is a review of an obviously formulated question that uses systematic and explicit methods to describe, distinguish, and appraise relevant research critically, and to collect and analyse data from studies that are included in the review. Statistical methods (meta-analysis) might or might not be used to analyse and summarize the outcomes of the included studies. Meta-analysis attributes the use of statistical techniques in a systematic review for putting together the results of the included studies (Moher, Liberati, Tetzlaff, Altman and the PRISMA Group, 2009). Systematic reviews differ from traditional narrative reviews, such as systematised reviews, in different ways. Narrative reviews are inclined to be more phenomenological, do not cover a planned inquiry of the literature, and therefore frequently centre upon a subset of studies in an area selected on the grounds of availability or author selection. Thus, narrative reviews, while informative, might often involve a factor of selection bias. They might also cause confusion at times, especially given that same studies have variant

consequences. Systematic reviews, as the name implies, usually consist of a detailed and comprehensive plan and search strategy derived a priori, with the aim of minimizing bias by describing, appraising, and synthesising all relevant studies on a particular topic. In general, systematic reviews contain a meta-analysis facet, which requires employing statistical ways of data collection to synthesise the data from various research items into a sole quantitative measure or summary impact size (Petticrew and Roberts, 2006). Restricting studies for inclusion to a single study design, such as randomised controlled trials, may limit the application of this methodology to provide insights about effectiveness rather than seeking answers to more complex search questions; for instance, why a particular intervention is effective (Grant and Booth, 2009).

Systematised reviews undertake an enterprise to comprise one or more components of the systematic review process while stopping short of claiming that the resultant output is a systematic review. For the most part, the search stage possesses more easily defined factors of systematicity, and an author can conduct a comprehensive search; however, the researcher can do little more than simply cataloguing included studies. On the contrary, the author may only search one or more databases, and then code and analyse all of the retrieved results in a systematic manner. The resulting output 'models' the systematic review process and helps the author to demonstrate an awareness of whole process and technical proficiency in the component steps. Such a review, however, necessarily falls short of being able to claim the comprehensiveness so basic to the systematic review method. For such reviews, quality assessment and synthesis might be less definable. This means that these processes are not identified, that they are modelled using a small set of eligible articles, or that they are missing completely. While the attempt at systematicity is to be well-received, such reviews do possess a greater likelihood of bias than those that stay connected most certainly to guidelines on the conduct of systematic reviews (Grant and Booth, 2009).

This study was conducted relying on a systematised review which focused on a number of articles, in respect of the research questions. One advantage of conducting a systematised literature review is that only relevant articles were chosen for the study in order to increase the validity of the research project. Systematized review leads to involve components of the systematic review process while stopping short of a systematic review. This specifically refers to reviews compiling evidence from multiple reviews into one accessible and usable document (Grant and Booth, 2009, p95).

This review is reported according to the PRISMA guidelines for the conduct and reporting of systematised reviews. The aim of the PRISMA statement is to help authors improve the reporting of systematic reviews and meta-analyses. PRISMA is an evidence-based minimum set of items for reporting in systematic reviews and meta-analyses. On the other hand, the PRISMA checklist is not a quality assessment instrument used to gauge the quality of a systematic review (Moher et al., 2009). In this study, however, PRISMA has been used since the first step of the systematic review, taking into account the fact that it is a much more accurate approach to fulfilling the requirements of the research methodology.

Study Selection

A total of 24 studies were identified for inclusion in the review. However, the included studies were not rated for quality or risk of bias. As systematised reviews are generally descriptive, it did not contain a systematic inquiry of the related literature. For this reason, even though the systematised review was quite informative, it can usually involve a factor of selection bias. Moreover, since the systematised review did not include a meta-analysis, the quality of the included studies could not be checked. The search strategy of using the PsycINFO, MEDLINE, ERIC, Academic Search Complete, Social Sciences Citation Index, Complementary Index Science Direct, Pro Quest and Academic OneFile databases yielded 172 results. Following the removal of duplicates, 115 studies remained. 61 studies were excluded through reviewing the titles and abstracts, as these studies did not meet the inclusion criteria. The full text of the remaining 54 studies was examined, and 24 were considered relevant and met the inclusion criteria. Prior to the searches, the researcher limited the search engines to the last seven years,

namely from 2012 to 2018. Apart from this, all of the articles that were selected for the study had to be peer reviewed. Moreover, the fact that they are reviewed by different researchers prior to being published reduces bias (Kelt, n.d). On the contrary, only relying on published work causes publication bias. Publication bias is derived from statistically significant selected published results (Normand, 1999). In this regard, the specific concern is that journals tend to reject studies which have statistically insignificant results. In other words, the probability of the publication of studies with statistically significant results is higher, which causes a bias in published literature, and then this bias is reflected in the literature-based studies (Borenstein, Hedges, Higgins and Rothstein, 2009). The first step in reducing the risk of publication bias is to have information from the researcher's unpublished research. Therefore, it is necessary for the researcher to reach as many studies as possible, and to add all studies involving meaningful or meaningless findings (Borenstein et al., 2009; Normand, 1999; Rosenthal and DiMatteo, 2001; Stuebing, Barth, Molfese, Weiss and Fletcher, 2009). Figure 1 outlines the PRISMA flow diagram of the processes for study inclusion.

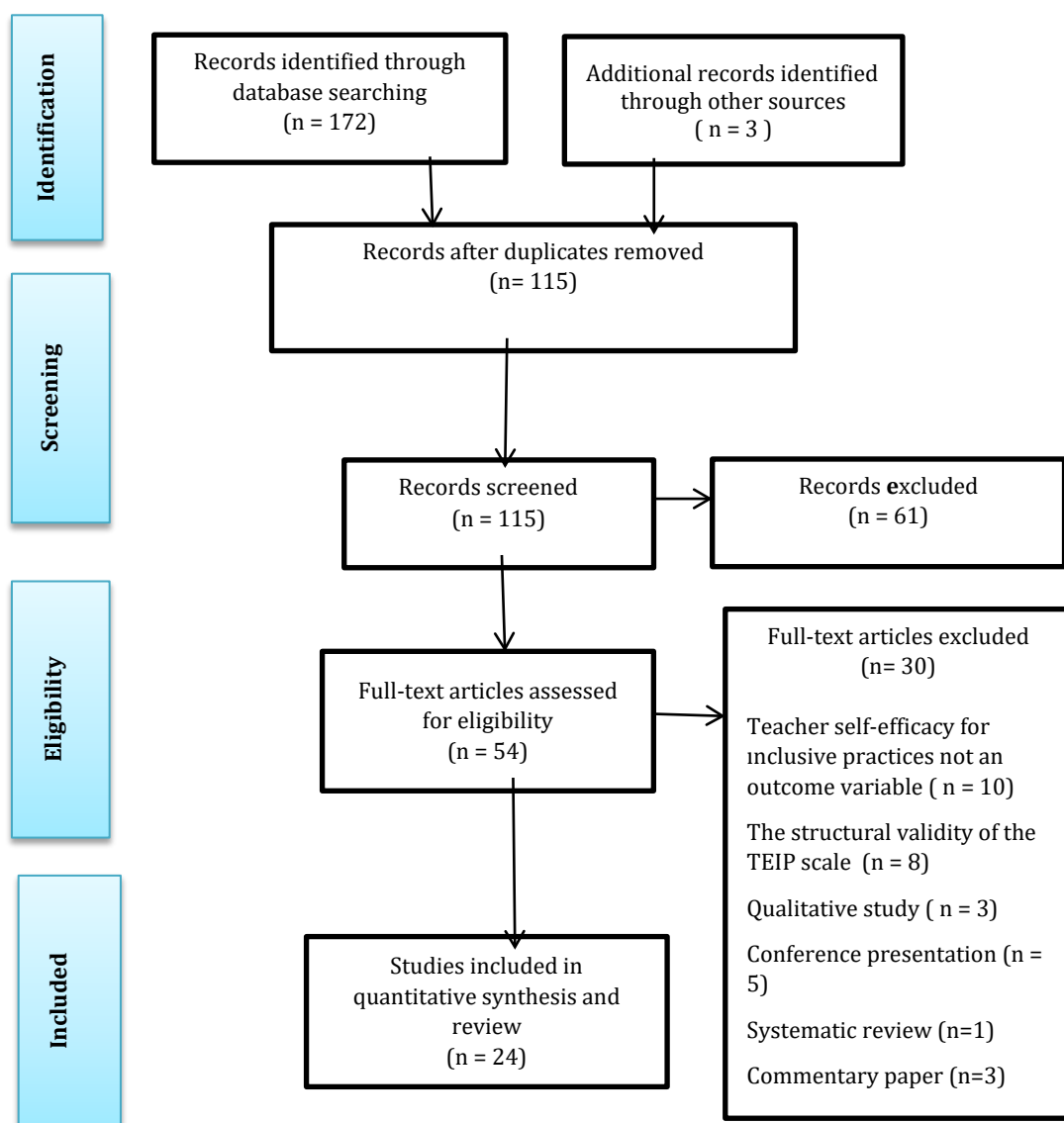


FIGURE 1. PRISMA flow diagram of processes for study inclusion

Inclusion and Exclusion Criteria

Inclusion criteria

Reports eligible for inclusion in the review were limited to peer-reviewed journal articles, reported in the English language, and published between January 2012 and June 2018. As the TEIP scale was published in 2012, the articles included in the study were selected starting from 2012. Participants were limited to pre-service and in-service teachers, and no age, gender, level of professional degree, area of training or level of teacher education programmes (or level currently teaching) factors were considered for exclusion. Some studies have also discussed other variables such as teachers' attitudes or behaviours regarding inclusive practices, apart from the variable of teachers' self-efficacy perceptions towards inclusive practices. In this case, only those parts that have predicted the self-efficacy perceptions of teachers towards inclusive education were included in the research.

Exclusion criteria

As this study did not allow for doing a wider search of the grey literature, due to the time, resources and word limitation of the dissertation, qualitative studies were not included. Moreover, conference presentations, studies in which teacher self-efficacy in terms of inclusive practices is not an outcome variable, studies reporting the structural validity of the TEIP scale, and qualitative studies have been excluded. Because the purpose of the research is to determine the self-efficacy perceptions of the teachers, studies involving only teacher self-efficacy without inclusive education settings have not been included in the study.

Search Strategy

A comprehensive search was conducted to identify and collate all relevant articles and theses that could be included and synthesized within the review. Studies were identified through systematically searching electronic databases for research articles, and hand-searching the reference lists of relevant articles. Search terms were applied to the PsycINFO, MEDLINE, ERIC, Academic Search Complete, Social Sciences Citation Index, Complementary Index Science Direct, Pro Quest and Academic OneFile databases. The last search was conducted on June 20th, 2018. A full strategy is shown in Figure 2.

Databases: PsycINFO, MEDLINE, ERIC, Academic Search Complete, Social Sciences Citation Index, Complementary Index Science Direct, Pro Quest and Academic OneFile databases.
Search:
'Teacher self-efficacy for inclusive practices' OR 'teacher self-efficacy for inclusive practices (TEIP)' AND 'in-service teacher' AND 'pre-service teacher' AND 'initial teacher education'
Limiters: All in English, January 2012 to June 2018, Journal articles

FIGURE 2. *The full search strategy*

Teacher Self-Efficacy for Inclusive Practices (TEIP) Scale

The TEIP scale, which was developed by Sharma, Loreman and Forlin, (2012), contains 18 questions investigating various dimensions of self-efficacy for readiness to teach in inclusive settings. Three dimensions of teaching efficacy- efficacy to use inclusive instruction (EII), to efficacy in collaboration (EC) and to efficacy in managing behaviour (EMB) are evaluated by this 18 item scale. Each dimension covers six items in that the scale employs the following ranking: 1= strongly disagree, 2= disagree, 3= disagree somewhat, 4= agree somewhat, 5= agree, and 6= strongly agree. Sharma et al. (2012) reported the reliability coefficient (Cronbach's alpha) of the overall scale $r = 0.89$. The total score value may range from 18 to 108. When TEIP is considered, teachers' self-efficacy perceptions, which can be classified as high, moderate and low, are determined by the arithmetic mean. Higher scores on the TEIP suggest that a respondent is slightly more effective when teaching students with diverse learning needs in an inclusive classroom. Teachers' replies on the three components supply an overview on their teaching efficacy from the point of all their students. In an attempt to comprehend how productive an

instructor is in teaching a student (e.g. one with significant learning needs), the scale might be employed by considering the learning requirements of a specific student when reacting to every item (Loreman, Sharma and Forlin, 2013). That no qualitative data were gathered was a limitation of the scale, since the most significant objective was to form a scale for quantitatively measuring instructing productivity (Sharma et al., 2012).

A teacher's ability to encourage inclusion in early childhood classrooms is a significant element which directly contributes to the teacher's effectiveness, although many teachers view themselves as inadequately prepared to support children's learning in inclusive settings (Darling-Hammond, 2006; Dozier and Berlotti, 2000). With the TEIP scale (Sharma et al., 2012), this aspect of teacher self-efficacy is measured by items related to the EII scale. Some sample items in the sub-scale that measures efficacy in instruction (e.g. 'I am confident in designing learning tasks so that the individual needs of students with disabilities are accommodated; I can accurately gauge student comprehension of what I have taught').

Another sub-scale measured by the TEIP scale (Sharma et al., 2012) is EMB. This sub-scale represents the perception that teacher's self-efficacy with regards to inclusion structures learners' success and behaviours just like instructors' behaviours and classroom leadership (Ahsan et al., 2012; Gibson and Dembo, 1984; Tschannen-Moran and Hoy, 2001). The items in the sub-scale that measure efficacy in managing behaviour (e.g. 'I can control disruptive behaviour in the classroom; I am confident in my ability to prevent disruptive behaviour in the classroom before it occurs') concern mainly with a conceived competency to block and deal with disruptive learner attitude. It is necessary to be aware that solely one item in the instruction and leadership attitude sub-scales hints somewhat on instructing learners with specific needs. The other items in these two sub-scales display applications that could be the component of any general evaluation of teacher self-efficacy. That's why several inclusive education applications are highly common methods that are practical with respect to all learners from diverse educational settings (Mitchell, 2008).

The third sub-scale in the TEIP scale is EC. Collaboration between pre-service teachers validates and expands their knowledge of content and pedagogy, factors that enhance teachers' perceptions of self-efficacy (Guo et al., 2011). From the three TEIP sub-scales, EC is most closely linked to students with special needs. Most of the items in this sub-scale involve SEN pupils (e.g. 'I can assist families in helping their children do well in school; I am confident in my ability to get parents involved in school activities of their children with disabilities'). It also requires participants to judge their efficacy to coordinate with families, co-workers and other professionals when instructing pupils requiring special needs.

RESULTS

Overview of Results

A total of 24 studies were identified for the views of pre and in-service teachers on self-efficacy towards inclusive learning. Four studies out of 24 were cross-country studies. While one of the four studies sampled Finland and South Africa, the others sampled China, Finland and South Africa, Pakistan and Australia, and Italy and Australia. In the remaining 20 studies, three were conducted in Canada, two in Bangladesh, and two in Hong Kong. The remaining studies were conducted in China, Mexico, the United States of America (USA), Italy, Pakistan, the Republic of Ireland, Nicaragua, the United Kingdom (UK), Japan, Australia and Turkey. Two of the studies were done on the basis of the continent instead of the country. In one of these studies, 20 countries were selected as the sample. The samples considered in terms of continents were Europe, America, Asia, Australia and Africa. 17 of the studies were quantitative and used a cross-sectional design, whereas four of them were coursework studies, and three of them were mixed-method studies. 14 of the studies were conducted with in-service teachers, and nine of them were conducted with pre-service teachers. However, one of the studies referred to both pre-service and in-service teachers.

The Results of the Examined Articles

The results are based on a narrative synthesis of the investigated studies. In other words, data synthesis was fulfilled by a narrative (vote counting) approach. A variety of terms are occasionally used to describe analyses in reviews when statistical methods (meta-analyses) are not used. These include 'qualitative syntheses and 'narrative syntheses. Neither of these terms is well defined nor appropriate as part of reviews of influences, which are seldom, if ever, non-quantitative or grounded on words or telling a story. An alternative term that might be used, if required, is a 'structured syntheses. This term may be used whether meta-analysis is used for some comparisons and outcomes or not at all. The analytic approach to a review of effects is similar with or without the use of meta-analysis; the difference between them is that the researcher does not used statistical methods in order to summarise the results.

There are some reasons for not calculating an average effect across studies. The first is missing information (e.g. unit of analysis errors and no reported intra-cluster correlations (ICCs) in reviews of cluster randomised trials). Secondly, unexplained heterogeneity can make the average effect difficult to interpret and potentially misleading. Finally, there are differences in populations, interventions, comparisons or methods that would make the average effect across studies meaningless. The results are shown in Figure 3.

| Study Citation | Country of origin and Sample | Study design, Predictor measure |
|---|---|--|
| 1) Ahsan, et al. (2012) "Exploring pre-service teachers' perceived teaching-efficacy, attitudes and concerns about inclusive education in Bangladesh" | Country: Bangladesh N=1623, 992 F, 631 M Pre-service teachers | Design: Cross-sectional (SACIE, Loreman et al. 2007). (TEIP, 2012) |
| 2) Savolainen, et al. (2012) "Understanding teachers' attitudes and self-efficacy in inclusive education: Implications for pre-service and in-service teacher education" | Country: Finland and South Africa, Finnish N= 1441, 78.3% F In-service teachers | Design: Mixed-methods (SACIE, 2007). (TEIP, 2012) |
| 3) Malinen, et al. (2013) "Exploring teacher self-efficacy for inclusive practices in three diverse countries" | Country: China, Finland and South Africa, N=1911 In-service teachers | Design: Cross-sectional (TEIP, 2012) |
| 4) Malinen, et al. (2013) "Dimensions of teacher self-efficacy for inclusive practices among mainland Chinese pre-service teachers" | Country: Chinese N: 552, 79.5 % F, 18.3 %, M Pre-service teachers | Design: Cross-sectional (SACIE, 2007) (TEIP, 2012) |
| 5) Delkaminer et al. (2013) "Examining inclusive practices in Nicaraguan schools" | Country: Nicaraguan N= 61, 56 F, 5M In-service teachers | Design: Cross-sectional (TEIP, 2012) |
| 6) Shaukat et al. (2013) "Pakistani and Australian pre-service teachers' attitudes and self-efficacy towards inclusive education" | Country: Pakistan and Australia, N= 317 Pre-service teachers | Design: Cross-sectional (ATIES, Wilczenski, 1991) (TEIP, 2012) |
| 7) Romero-Contreras et al. (2013) "Preparing teachers for inclusion in Mexico: How effective is this process?" | Country: Mexico N=813, 88% F Pre-service teachers | Design: Cross-sectional (SACIE, 2007) (TEIP, 2012) |
| 8) Douglas et al. (2013-2014) "An investigation of attitudes and perceptions toward inclusion: Comparing pre-service teachers to first year teachers" | South eastern United States Pre-service teacher candidates (n=40) , First year teachers (n=51) | Design: Cross-sectional (SACIE-R, Forlin et al., 2011) (TEIP, 2012) |
| 9) Forlin, et al. (2014) "Predictors of improved teaching efficacy following basic training for inclusion in Hong Kong" | Country: Hong Kong N=737, 70% F, 30% M In-service teachers | Design: Coursework (SACIE-R, 2011) (TEIP, 2012) |
| 10) Peebles & Sal Mendaglio (2014) "The impact of direct experience on pre-service teachers' self-efficacy for teaching in inclusive classrooms" | Country: Canada N= 141, 78.7% F, 21.3% M Pre-service teachers | Design: Coursework (TEIP, 2012) (DEQ) |
| 11) Montgomery & Mirenda (2014) | Country: Canada | Design: Cross-sectional |

| | | |
|---|--|---|
| “Teachers’ self-efficacy, sentiments, attitudes, and concerns about the inclusion of students with developmental disabilities” | N=100, 87.0% F, 13.0% M In-service teacher | (SACIE-R, 2011) (TEIP, 2012) |
| 12) Sharma, et al. (2015) “Attitudes and self-efficacy of pre-service teachers towards inclusion in Pakistan” | Country: Pakistan N= 194, 121 F, 73 M Pre-service teachers | Design: Cross -sectional (AIES, Wilczenski, 1995) (TEIP, 2012) |
| 13) Tasnuba & Tsokova (2015) “BRAC primary school teachers’ teaching-efficacy, attitude, sentiment and concern towards inclusion of children with disabilities in regular classrooms in Bangladesh” | Country: Bangladesh N= 400 In-service teachers | Design: Cross -sectional (SACIE-R, 2011) (TEIP, 2012) |
| 14) Sharma & Nuttal (2016) “The impact of training on pre-service teacher attitudes, concerns, and efficacy towards inclusion” | Country: Australian N= 30, 83.3% , 16.7% M Pre-service teachers | Design: Mixed design (TATIS; Bailey’s, 2004). (CIES; Sharma & Desai, 2002), (TEIP, 2012) |
| 15) Chao, et al.(2016) “Improving teaching self-efficacy for teachers in inclusive classrooms in Hong Kong” | Country: Hong Kong N= 417, 64.2% F, 39% M In-service teachers | Design: Mixed method (TEIP, 2012) |
| 16) Hosford & O’Sullivan, 2016 “A climate for self-efficacy: the relationship between school climate and teacher efficacy for inclusion” | Country: Republic of Ireland N=57, 84.2% F In-service teachers | Design: Cross- sectional (TEIP, 2012), (R-SLEQ, Johnson, Stevens and Zvoch 2007) |
| 17) Ekins, et al. (2016) “An analysis of English teachers’ self-efficacy in relation to SEN and disability and its implications in a changing SEN policy context” | Country: UK N=213, 85% F In-service teachers | Design: Cross -sectional (TEIP, 2012) |
| 18) Specht, et al. (2016) “Teaching in inclusive classrooms: efficacy and beliefs of Canadian preservice teachers” | Country: Canada N=1490, 74.2% F, 25.8% M Pre-service teachers | Design: Cross -sectional (TEIP, 2012), (BLTQ, Jordan and Glenn 2008). |
| 19) Hecht, et al. (2017) “Attitudes and teacher efficacy among Italian and Austrian teachers: A comparative study” | Country: Italian and Austrian, N= 585 Pre-service teachers | Design: Cross -sectional (SACIE-R, 2011) (TEIP, 2012) |
| 20) Yada & Savolainen (2017) “Japanese in-service teachers’ attitudes toward inclusive education and self-efficacy for inclusive practices” | Country: Japanese N=359 , 53.5% F, 43.7% M In-service teachers | Design: Cross- sectional (SACIE-R, 2011) (TEIP, 2012) |
| 21) Kormos & Nijkowska (2017) “Inclusive practices in teaching students with dyslexia: Second language teachers’ concerns, attitudes and self-efficacy beliefs on a massive open online learning course” | Country: European countries including the UK, America, Asia, Australia, Africa. Pre- course N= 940, Post-course N=630 In-service teachers | Design: Coursework (SACIE-R, 2011) (TEIP, 2012) |
| 22) Özokcu (2018) “The relationship between teacher attitude and self-efficacy for inclusive practices in Turkey” | Country: Turkey N: 1163, 62.8% F, 37.2% M In-service teachers | Design: Cross -sectional (SACIE-R, 2011) (TEIP, 2012) |
| 23) Aielloa & Sharma (2018) “Improving intentions to teach in inclusive classrooms: The impact of teacher education courses on future Learning Support Teachers” | Country: Italy N = 102, 91% F, 9% M In-service teachers | Design: Coursework (AIS, Sharma & Jacobs, 2016) (ITIS, Sharma & Jacobs, 2016), (TEIP, 2012) (CIES, Sharma & Desai, 2002) |
| 24) Boynton Hauerwas & Mahon (2018) “Secondary teachers’ experiences with students with disabilities: Examining the global landscape” | Country: Armenia, Bolivia Bulgaria, Cambodia, Chile, Colombia, Dominican Republic Ecuador, Haiti, India, Jordan Mali, Nicaragua, Niger Republic, Poland, Romania, Russia, Ukraine, Yemen, Zambia, N: 21 In-service teachers | Design: Cross sectional (TEIP, 2012) |

FIGURE 3. Studies included in quantitative synthesis and review

DISCUSSION and CONCLUSIONS

Discussion of Pre-Service Teachers' Perception of Self-Efficacy Rely on Sub-Scales Regarding Inclusive Practices

Three of the studies included in the systematised review have illustrated that pre-service teachers showed the highest perception of self-efficacy towards mainstreaming practices in EII (Douglas, Moore and Stoltz, 2013-2014; Hecht, Aiello, Pace and Sibilio, 2017; Peebles and Sal Mendaglio, 2014) compared to the other sub-scales, followed by EMB (Ahsan et al., 2012; Hecht et al., 2017; Specht, McGhie-Richmond, Loreman et al., 2016). The lowest self-efficacy was found in the EC sub-scales (Ahsan et al., 2012; Hecht et al., 2017; Peebles and Sal Mendaglio, 2014). Collaboration is important to providing a good service for children with a SEN statement in educational settings. It is essential that all teachers, teaching assistants and parents should be aware of disabled children's needs in order to develop logical strategies for both the school and home environments. Therefore, there has emerged a need to give importance to the establishment of training programmes for pre-service teachers to develop collaboration skills in order to improve their perceptions of self-efficacy towards inclusive practices.

Previous experience in communicating with disabled people is related to higher self-efficacy among pre-service teachers. Most teacher license programmes require pre-service teachers to spend time observing in-service teachers, teaching lessons, managing behaviours, collaborating, and reflecting on actual teaching situations that help develop the self-efficacy beliefs of pre-service teachers before they are licensed and are responsible for their own classrooms (Stephenson, O'Neill and Carter, 2012). When pre-service teachers observe in-service teachers' teaching skills, their self-efficacy levels towards inclusive practices tend to increase (Loreman et al., 2013). Significant interactions and being in the final two years of study can also influence an increase in self-efficacy for pre-service teachers (Romero-Contreras, Garcia-Cedillo, Forlin and Lomeli-Hernandez, 2013). For this reason, in order to increase the perception of teachers' self-efficacy towards inclusive practices, it is necessary to increase the amount of time that teachers spend with their special needs students. In this regard, through the training of teachers at university, prolonging the amount of practical training which they have completed in inclusive classes can contribute to the increase in self-efficacy perceptions of teachers towards inclusive practices. In addition, the most important reason underlying the fact that students in the last two years of university are more likely to have higher self-efficacy regarding mainstreaming practices may be an increase in the information they possess about students with disabilities. As the education level increases, the knowledge of legislation about students with disabilities will also be increased, as well as increasing the teachers' knowledge and competence towards training for students with special needs. This situation illustrates the effectiveness of the curriculum in promoting positive attitudes, high self-efficacy and tolerance with regards to inclusive practices.

Moreover, even though gender was not a significant factor in determining the grade of self-efficacy, men scored higher than women in the behaviour management sub-scale (Ahsan et al., 2012). However, a weak correlation was found between age range and EMB (Hecht et al., 2017). Furthermore, the participants of two-year post-degree programmes indicated higher self-efficacy for managing behaviour and collaboration than those in the one-year post-degree and five-year first-degree programmes. Finally, more than 30 days' experience teaching students with special needs illustrated higher scores on all three TEIP sub-scales (Specht et al., 2016). The results suggest that the increment in pre-service teachers' practical training experience regarding students with special needs will help to improve teachers' perceptions of self-efficacy towards inclusive practices.

Discussion of In-Service Teachers' Perceptions of Self-Efficacy Rely on Sub-Scales Regarding Inclusive Practices

The six studies included in the systematised review have illustrated that in-service teachers demonstrated the highest perception of self-efficacy towards mainstreaming practices in EII compared to the other sub-scales (Delkamiller, Swain, Leader-Janssen and Ritzman, 2013;

Ekins, Savolainen and Engelbrecht, 2016; Hosford and O'Sullivan, 2016; Montgomery and Mirenda, 2014; Savolainen et al., 2012; Tasnuba and Tsokova, 2015), followed by EMB (Ekins et al., 2016; Forlin et al., 2014; Savolainen et al., 2012). The lowest self-efficacy was observed in the collaboration sub-scale (Ekins et al., 2016; Savolainen et al., 2012; Tasnuba and Tsokova, 2015). These results demonstrate that both pre- and in-service teachers had similar self-efficacy perceptions in the three sub-scales of the TEIP scale, namely collaboration, managing behaviour, and inclusive instructions. Additionally, it seemed that pre-service teachers continue to have the same perceptions of self-efficacy which they have for inclusive practices after starting to provide teaching services. However, as a result of the increased teaching experience, it is expected that self-efficacy towards inclusive practices will increase in all of the TEIP sub-scales.

There was a positive correlation between special education in-service teachers and the collaboration sub-scale. Mainstreaming teachers showed the highest self-efficacy in managing behaviour. It appears that since mainstreaming teachers have taken a more comprehensive course on applied behaviour analysis at university than the other branch teachers, they may feel more comfortable with behaviour management regarding students with special needs. Additionally, males had greater self-efficacy in managing behaviour compared to their female counterparts (Malinen, Savolainen, Engelbrecht et al., 2013). In this regard, it can be said that men need to show a more authoritarian attitude than females in terms of basic impulse and existence, which leads to this result. Moreover, even if the demographic factor played a role in some of the cases related to behavioural management, Hosford and O'Sullivan (2016) reported a contradictory conclusion, which is that none of the demographic variables were connected with teaching efficacy beliefs. This is because, according to Hosford and O'Sullivan (2016), much more than demographic features, teachers have a strong belief that the availability of school resources, collaborative structures, and teachers' self-efficacy play a greater role regarding the three sub-scales, particularly in managing disruptive behaviour. A positive relationship was also found between the perception of challenging behaviours and confidence in managing them. In this study, it was found that teachers feel confident to manage challenging behaviours when they receive support from the principal and parents, government policy, resource support from home, and collaboration with parents. As a matter of fact, one of the factors affecting the quality of education in schools is the professional work relations between the 'manager-teacher and teacher-teacher'. For this reason, a successful school principal should adopt a participatory approach by sharing the leadership and adding teachers to the management of the school, the planning of the training programme, and the management of expenditures and other policy decisions (Çinkır and Çetin, 2010).

On a side note, according to Ekens et al. (2016), no differences were found between self-efficacy and gender or teachers holding a BA or MA degree. Possibly, the reason for this is that English teachers have found themselves more satisfied with the social-emotional, cognitive and psychological sense in the classroom environment due to the experience and age factors they have. On the other hand, age or teaching experience did not influence the inclusive instructor or managing behaviour sub-scales. There was a positive correlation, however, between the collaboration sub-scale and age or teaching experience, particularly when teachers were working with young peers, on account of the fact that working with young peers helps special education school teachers to increase their collaboration skills in the classroom environment.

Discussion of Variables Affecting Overall Teacher Self-Efficacy Regarding Inclusive Practices

According to the articles, length of training, knowledge of local legislation on disability, confidence in teaching a student with a disability, having significant interaction with disabled students, and level of training all play an important role regarding pre-service teachers's self-efficacy towards mainstreaming practices (Ekens et al., 2016; Malinen et al., 2013; Peebles and Sal Mendaglio, 2014; Romero-Contreras et al., 2013; Sharma, Shaukat and Furlonger, 2015). On the other hand, it seemed that gender was the weakest predictor of the variables with regards to pre-service teacher's self-efficacy in inclusive education settings, whereas males had a higher level of perceived teaching efficacy compared to females (Ahsan et al., 2012; Romero-Contreras

et al., 2013). Moreover, in light of the studies, it appears that subject major was also quite a significant predictor. In other words, a pre-service teacher whose major is special education teaching had higher self-efficacy towards mainstreaming practices compared to general education teachers, possibly due to the familiarity of special education teachers in dealing with students with limited verbal fluency, learning difficulties or any other additional needs.

It was determined that the difference between the scores obtained from the teacher self-efficacy scale and the sub-dimension scores of the mainstreaming practices was found to be statistically significant according to the level of education of the teachers in relation to special education. As this difference is due to the teachers who are educated in terms of special education at the upper level, the scores of the teachers who had received upper level education are higher than the other teachers. In the direction of these findings, it can be said that the education received in terms of applying mainstreaming practices in the classroom environment leads to an increase in the self-efficacy perceptions of teachers regarding inclusive practices. Avradimis, Bayliss and Burden (2000) stated that teachers who have been well-trained in terms of inclusive education and SEN pupils would have better attitudes towards inclusive practices in the educational setting, and thus they would provide more benefit to students. According to the study conducted by Orel, Zerey and Töret (2004), it was stated that the opinions of the teachers who took courses on inclusive education in the undergraduate programme were more positive. These supported the findings of the current research. In many studies, it has been found that the majority of teachers do not have any knowledge about mainstreaming practices, and they are not trained with regards to inclusion and special needs education (Babaođlan and Yılmaz, 2010; Berry, 2011; Çankaya and Korkmaz, 2012; Çerezci, 2015). Moreover, the scores of teachers who stated that they do not have knowledge about legislation and policy related to special education were found to be significantly lower than the other teachers. On the other hand, the scores of the teachers who defined their knowledge of the legislation and politics of inclusive education as good were higher than the teachers who defined it as weak (Orel et al., 2004).

The research conducted in Australia showed that getting in touch with disabled people really affects the level of pre-service teachers' self-efficacy towards mainstreaming practices. Furthermore, most studies have illustrated that the amount of training, experience, subjects, policy knowledge, confidence in teaching a student with a disability, subject major, working with young peers, primary and special education teachers, gender, professional development training about inclusion and SEN, and demographic variables played an important role regarding in-service teacher's self-efficacy in relation to mainstreaming practices (Sharma and Nuttal, 2016). Nevertheless, studies conducted in Armenia, Bolivia, Bulgaria, Cambodia, Chile, Colombia, the Dominican Republic, Ecuador, Haiti, India, Jordan, Mali, Nicaragua, the Niger Republic, Poland, Romania, Russia, Ukraine, Yemen, and Zambia have revealed that gender, demographic variables, previous training experience with dyslexic students, level of education, being a special education or mainstream schools teacher, years of teaching experience, legislation knowledge, and experience of students with a SEN statement were not significantly important in terms of increasing self-efficacy among in-service teachers (Boynton Hauerwas and Mahon, 2018).

CONCLUSION

The aim of this study was to explore the perceptions of pre- and in-service teachers' self-efficacy regarding inclusive practices by using the TEIP scale. In this regard, one of the most noticeable findings in this study was that both pre- and in-service teachers perceived themselves as most adequate in the inclusive instruction sub-scale, compared to the other sub-scales of the TEIP. This means that pre- and in-service teachers perceived themselves to be sufficient in designing learning tasks to accommodate learners bearing disabilities at school, using a variety of assessment strategies, measuring learner understanding of what they have instructed, supplying proper challenges for highly competent learners, supplying an extra description or clue if learners are puzzled, and getting learners to study in cooperation as pairs or as small groups. Pre and in-service teachers perceived themselves moderately in the

behaviour management sub-scale. Conversely, pre- and in-service teachers felt themselves most inadequate in terms of collaboration, compared with the other sub-scales.

The strongest predictor was found to be field experience for pre-service teachers' self-efficacy regarding inclusive applications. Gender was the weakest predictor variable, even though males had a higher grade of perceived teaching productivity compared to females, among the pre-service teachers. It was found that subject major was also an important predictor for pre-service teachers whose major was special education. It was conceived that special education instructors had more self-efficacy with regards to mainstreaming practices compared to general education teachers. Moreover, previous experience in engaging with disabled people illustrated significantly more self-efficacy among pre-service instructors.

It was apparent that special education in-service teachers had higher self-efficacy in the collaboration sub-scale. Mainstreaming teachers demonstrated the greatest self-efficacy regarding the managing behaviour sub-scale. Additionally, males had the highest self-efficacy in managing behaviour in comparison with their female peers. Moreover, school resources, collaborative structures and in-service teacher efficacy beliefs had an important effect with regards to the three sub-scales, specifically in managing disruptive behaviour. A positive correlation was also found between the perception of challenging behaviours and confidence in managing them. Subsequently, the management of challenging behaviours was linked to support from principals and parents, government policy, resource support from home and collaboration with parents. It was seen that there was no similarity between the degree of in-service instructors' with respect to self-efficacy in mainstreaming applications. Furthermore, working with young peers had a meaningful impact in the sense of in-service teachers' self-efficacy. Age or teaching experience, however, did not influence the inclusive instruction or managing behaviour sub-scales. On the other hand, it was observed that there was a positive correlation between the collaboration sub-scale and age or teaching experience. It was shown that special education school teachers and specialist provisions had a degree of importance regarding higher efficacy in collaboration.

According to the included studies, the factors affecting the overall instructor self-efficacy for inclusive applications covering both pre- and in-service instructors contained: experience, length of training, knowledge of local legislation or disability, confidence in teaching a student with a disability, having significant interaction with disabled students, and level of training.

Four academic preparation studies out of the six which were conducted to evaluate the self-efficacy perceptions of pre-service teachers showed that teacher training contributed to the development of pre-service teachers' collaboration, knowledge of legislation, and self-confidence in teaching skills. On the other hand, two academic preparation studies illustrated that there was no significant differences between pre- and post-test scores in terms of increasing the perception of self-efficacy regarding inclusive practices.

The results of four cross-country studies have shown that teachers' self-efficacy perceptions towards mainstreaming practices differ from country to country. In my opinion, this might be due to different education policies in each country. Additionally, it was concluded that collaboration was an important sub-scale in terms of teachers' self-efficacy regarding mainstreaming practices, and teaching experience was an effective predictor of the collaboration sub-scale.

Recommendations

According to this systematized review's results, it can be suggested that future pre-service and in-service teacher training programmes ought to developed teachers' self-efficacy with an emphasis on it, especially their collaboration skills, as well as training their self-efficacy in behaviour management and inclusive instruction. It might be useful to change teacher training programmes in order to improve the collaboration skill of teachers regarding mainstreaming practices. Therefore, in the direction of the findings of this study, teachers' attitudes can be more favourable regarding inclusive practices if they had faced more proper learning experiences on mainstreaming practices in cooperation with their peer instructor trainees at the time of their first teacher education programmes.

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