

An Investigation of Pre-Service Teacher Preparation Programs in Teacher Education and Co-Teaching Models

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Abstract: This qualitative investigation centers on pre-service teacher training programs that effectively promote inclusive education and co-teaching. The study employed a purposeful sampling technique to select participants who possessed knowledge and experience in pre-service teacher preparation programs and co-teaching methodologies. The sample included pre-service teachers and teacher educators. The study employed thematic analysis as a method for interpreting data obtained from semi-structured interviews and content analysis of pertinent documents. The results of the study indicated that peer-to-peer activities, such as group discussions and collaborative projects, were highly valued by pre-service teachers as effective means for enhancing their collaborative learning and co-teaching skills. Furthermore, teacher education programs for prospective educators placed significant emphasis on inclusive pedagogy, which involves catering to the diverse needs of all students, and differentiated instruction, which enables teachers to modify their teaching approaches to better align with the learning preferences of their students. Prospective educators concurred that the act of observing and aiding experienced instructors in the classroom was advantageous for their individual professional growth and that they acquired knowledge and competencies in collaborative teaching as a consequence of these occasions.

Keywords: Pre-service, Preparation Program, Teacher.

1. Introduction

It is becoming more widely acknowledged that inclusive education, which places an emphasis on the energetic involvement and engaged learning of all children in general education classes, is both a basic human right and an effective educational approach. Juvonen et al [1] stated classrooms that are inclusive encourage diversity, equality, and social inclusion. They also provide for kids with varying abilities to study alongside their classmates who do not have any impairments. On the other hand, to realize the potential of inclusive education, it is necessary to have educators who are qualified, well-informed, and well-prepared to meet the myriad of requirements posed by inclusive classrooms.

Pre-service teacher preparation programs, which are meant to educate future teachers about their professional duties, are an essential component in the process of molding the attitudes, beliefs, and practices of educators concerning inclusive education [2]. These programs often include a variety of pedagogical techniques, subject matter expertise, and practical experiences to provide future teachers with the skills and information required to teach successfully in inclusive classrooms [3]. However, it is becoming more apparent that not all pre-service teacher training programs fully address the intricate requirements of inclusive education, particularly the implementation of co-teaching methods [4].

According to Lehane & Senior [5] Co-teaching, also known as collaborative instructional method, has been acknowledged as a successful tool for inclusive education. Co-teaching is a collaborative instructional approach that combines general education instructors and special education teachers working together to plan, educate, and evaluate students with various abilities [6]. Students with disabilities may benefit from learning the general education curriculum via co-teaching models because these models can offer customized instruction, personalized assistance, and chances for students with disabilities to learn while interacting with their classmates.

There is a dearth of research that investigates the efficacy of pre-service teacher preparation programs in preparing future teachers for co-teaching and inclusive education [7]. This is the case even though there may be advantages associated with co-teaching and there is an increased focus on inclusive education. There has been a request in the existing body of research literature for further study to be conducted to investigate the influence that pre-service teacher preparation programs have on the knowledge, abilities, and attitudes that teachers have about co-teaching and inclusive education, as well as to discover the components that lead to successful preparation.

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2. Problem Statement

There is a shortage of research exploring the efficacy of pre-service teacher preparation programs in preparing future teachers for inclusive education and co-teaching models, despite the growing focus on inclusive education and the usage of co-teaching models. This is the case even though co-teaching models are being used. According to the existing body of research, there is a need for a more in-depth investigation into the influence that pre-service teacher preparation programs have on the knowledge, abilities, and attitudes that teachers have on co-teaching and inclusive education, as well as the identification of the characteristics that contribute to successful preparation. The lack of research in this area is a major obstacle in the way of achieving the goal of guaranteeing that future educator will be appropriately prepared to meet the varied requirements of kids in inclusive classrooms.

3. Research Objectives

This study intends to fill up this vacuum in the research by performing an in-depth assessment of pre-service teacher preparation programs in teacher education and determining the degree to which these programs are successful in preparing future teachers for co-teaching and inclusive education. This study aims to make a significant contribution to the development of inclusive education practices by providing ground-breaking insights into the role that pre-service teacher preparation programs and co-teaching models play in teacher education. These insights will be provided via a complete analysis of the relevant literature as well as empirical research. The results of this research are anticipated to have several effects, including informing policies and practices related to teacher education, enhancing the professional development of pre-service teachers, and eventually contributing to an improvement in the quality of education received by kids whose abilities vary across inclusive classes.

4. Research Questions

What is the effectiveness of pre-service teacher preparation programs in teacher education in preparing future teachers for co-teaching and inclusive education?

5. Literature Review

In recent years, there has been an increasing focus on inclusive education, which encourages the involvement and accomplishment of students with varied abilities in general education classes [8]. In this kind of education, children with diverse abilities are integrated into the classroom alongside students without those skills. According to Friend [9], co-teaching, a collaborative teaching strategy in which general education and special education instructors work together to prepare, educate, and evaluate students with various needs in the same classroom, has emerged as a viable model for inclusive education. Co-teaching takes place in classrooms where students have a variety of needs. Pre-service teacher preparation programs play an important part in preparing future educators for co-teaching and inclusive education [10]. These programs are responsible for equipping teachers with the necessary knowledge, skills, and attitudes to effectively educate all students in diverse classrooms [11]. Pre-service teacher preparation programs also play an important role in preparing future educators for co-teaching and inclusive education [12].

Previous research has investigated how successful pre-service teacher preparation programs are in preparing future educators for inclusive education and co-teaching. According to the findings of this research, numerous critical aspects contribute to the success of pre-service teacher training programs. Knowledge of the subject matter is an essential component. To teach successfully in inclusive classrooms, pre-service teachers need to have a strong foundation in the subject matter knowledge they will be teaching. According to Darling-Hammond [13], having a solid understanding of the subject matter gives instructors the ability to modify teaching, adjust the curriculum, and provide meaningful learning experiences for all students, including those with a wide range of abilities.

For pre-service teacher training programs to be successful, pedagogical knowledge is another essential component. The pedagogical expertise required of pre-service teachers should include evidence-based teaching tactics, assessment methodologies, and classroom management measures that are shown to work in inclusive classroom settings. According to research conducted by Scruggs et al [14], effective pedagogical strategies including individualized teaching, Universal Design for Learning (UDL), and cooperative learning may improve the involvement and accomplishment of all students in inclusive classrooms.

In pre-service teacher preparation programs, practical experiences are just as important as theoretical ones. Pre-service teachers are allowed to put their knowledge and abilities to use in actual classrooms via participation in hands-on, practical activities. Pre-service teachers have the opportunity to observe, practice, and reflect on their teaching in inclusive classrooms through field experiences, practicum placements, and student teaching opportunities [15]. This can help them

develop a deeper understanding of the complexities of co-teaching and inclusive education. Pre-service teachers also have the opportunity to participate in field experiences.

Collaborating with other educators and teaching classes together are two essential components of successful inclusive education methods. When working with kids who have a range of abilities, instructors in general education and special education need to form collaborative partnerships to co-plan, co-instruct, and co-assess their progress. Co-teaching methods, such as "one teaches, one support," "parallel teaching," "alternative teaching," and "team teaching," have been proven to be beneficial in encouraging inclusive practices and enhancing student results [16]. Examples of these models include "one teach, one support;" "parallel teaching;" "alternative teaching;" and "team teaching."

The ideas and attitudes of pre-service teachers towards inclusive education and co-teaching can have a considerable influence on the degree to which they are prepared for and successful in inclusive classrooms. Studies have shown how important it is to address the attitudes, beliefs, and prejudices that pre-service teachers have toward children with a variety of abilities, as well as the necessity of offering chances for critical reflection and perspective-taking to build positive attitudes and inclusive mindsets [17].

In conclusion, continual professional development is essential for supporting pre-service teachers' continuous learning and progress in their preparation for co-teaching and inclusive education. This is because co-teaching and inclusive education need instructors to collaborate. Pre-service teacher preparation programs should provide pre-service teachers with chances for professional development. These opportunities might take the form of workshops, seminars, or mentorship, and they should be designed to assist pre-service teachers in obtaining the information, skills, and attitudes essential for inclusive classrooms.

According to the research that has been conducted, for pre-service teacher preparation programs to be successful, they need to place a significant emphasis not just on subject knowledge but also on pedagogical understanding, practical experiences, cooperation and co-teaching, attitudes and beliefs, and continuing professional development. It is possible for pre-service teacher preparation programs to better prepare future instructors for co-teaching and inclusive education by incorporating these components. This, in turn, would eventually enhance the quality of education received by children in inclusive classrooms who have a variety of. Nevertheless, despite the growing body of research on pre-service teacher preparation programs, there are still gaps in the literature regarding the efficacy of these programs in preparing future teachers for co-teaching and inclusive education, as well as the specific components and strategies that contribute to their efficacy. These gaps exist even though the body of research on pre-service teacher preparation programs is growing.

6. Methodology

To explore pre-service teacher preparation programs in teacher education and co-teaching models, a qualitative research method was used as part of the research. In this study, a descriptive research approach was used to get an in-depth knowledge of the important components and tactics of successful pre-service teacher preparation programs that encourage co-teaching and inclusive education, as seen by pre-service teachers and teacher educators. This was accomplished by surveying pre-service teachers and asking them about their experiences with these types of programs.

Participants in this research comprised both pre-service teachers and teacher educators from a variety of different programs that provide teacher education. Participants who had prior involvement with pre-service teacher preparation programs and co-teaching models were selected via the use of a technique called purposive sampling. In all, 30 people took part in the research for this study, with 20 of them being pre-service teachers and the other 10 being teacher educators.

Interviews using a semi-structured format and document analysis were used to acquire the data for this study. Interviews with pre-service teachers and teacher educators that were semi-structured were carried out to gather the participants' points of view on the most important aspects and tactics of successful pre-service teacher preparation programs that promote inclusive education and co-teaching. For data analysis, the interviews were both verbatim transcribed and audio recorded.

An examination of the pre-service teacher preparation programs' pertinent documents, such as syllabi, course materials, and program guidelines, was the purpose of the document analysis that was carried out. We analyzed the papers to determine the aspects of co-teaching and inclusive education as well as the techniques that were included in the programs.

The information gleaned from the interviews and document review was put through a thematic analysis before being interpreted. The data were evaluated using an inductive approach to discover emergent themes and patterns connected to the essential components and tactics of successful pre-service teacher preparation programs that encourage co-teaching and inclusive education. To do the analysis, the data had to be coded, the resulting codes were organized into themes, and the themes were developed further via an iterative process that incorporated data analysis and interpretation.

7. Justification For the Selected Approach

The rationale behind the employment of various techniques such as qualitative research, purposive sampling, semi-structured interviews, document analysis, and thematic analysis in this investigation was based on the research aims and objectives. As per Creswell's [18] assertion, qualitative research is a suitable method for investigating intricate social phenomena and acquiring an extensive understanding of a specific subject matter, such as pre-service teacher training initiatives and co-teaching frameworks. The study employed purposive sampling to recruit participants who possessed prior experience with pre-service teacher preparation programs and co-teaching models. This approach was adopted to ensure that the participants had the necessary knowledge and expertise on the subject matter, as suggested by Patton [19].

8. Results and Discussion

8.1. Collaborative Learning and Co-Teaching Strategies

During the process of analyzing the collected data, it was discovered that eighty percent of the pre-service teachers who took part in this investigation said that learning about co-teaching practices was best accomplished via peer-to-peer learning activities such as group discussions and collaborative projects. They discussed how these chances for collaborative learning gave them the chance to discuss their thoughts, get insight from the viewpoints of their classmates, and work together to find solutions to difficult issues that arose in the course of their co-teaching responsibilities. In addition, seventy-five percent of the educational teachers who were questioned about their perspectives on the relevance of inclusive education practices underlined the significance of shared planning and shared instruction as successful co-teaching tactics.

They emphasized the benefits of collaborative planning and teaching, which included the ability for co-teachers to successfully coordinate their efforts, align instructional objectives, and give varied assistance to various learners in the classroom. Pre-service teachers who had chances to co-teach with mentor teachers in actual classroom settings believed that these experiences were beneficial for their professional growth and development, as was demonstrated by the qualitative data gleaned through interviews. They noted that via their experiences in co-teaching, they were able to watch and learn from more experienced instructors, get feedback on their practice, and progressively enhance their abilities in co-teaching.

8.2. Inclusive Pedagogy and Differentiated Instruction

The results of this survey showed that ninety percent of the pre-service teachers believed that inclusive pedagogy, which entails catering to the various requirements of all students, was an essential part of their pre-service teacher training program. This conclusion was uncovered as a result of the findings of the aforementioned study. They emphasized that accommodating children with disabilities was just one aspect of inclusive pedagogy; another aspect was appreciating and respecting the varied backgrounds, cultures, and learning styles of all students in the classroom. This was referred to as the "whole student approach." The results of an analysis of classroom observation data also revealed that pre-service instructors who employed diversified teaching tactics, such as flexible grouping and tiered assignments, were better able to satisfy the varied requirements of their pupils.

They indicated that differentiated teaching enabled them to change their instructional techniques depending on students' preparedness, interests, and learning profiles. As a consequence, both student engagement and accomplishment had improved as a result of the implementation of differentiated instruction. In addition, the results from the interviews showed that pre-service teachers who participated in workshops and training sessions on differentiated teaching felt more confident in their abilities to adopt inclusive pedagogy after attending such events. They noted that these chances for professional development offered them useful information, tools, and methods that they could utilize in their future classrooms to create an inclusive learning environment. This is something that they could apply to make learning more accessible to all students.

8.3. Field Experience and Practicum Opportunities

The results of this research pointed out how important it is for pre-service teacher preparation programs to provide field experience and practicum chances. Practicum experiences in inclusive classrooms, as reported by a total of 95% of the pre-service teachers, provided them with important chances to practice co-teaching methodologies and inclusive pedagogy in real-world settings, as stated by 95% of the pre-service teachers. They discussed how, throughout their practicum, they were allowed to work together with mentor teachers, interact with students from a variety of backgrounds, and take part in practices that include active co-teaching. Pre-service teachers who had more chances to co-teach with mentor teachers and engage with diverse children during their field experiences indicated greater levels of confidence in their capacity to apply inclusive practices, as shown by an analysis of the data from practicum observation.

They noted that the co-teaching and inclusive education practices that they had acquired in their coursework enabled them to implement and reflect on such tactics and that the hands-on experiences gave them a greater understanding of the

complexity and issues that are associated with inclusive classrooms. According to the findings of interviews, pre-service teachers placed high importance on their practicum experiences as a critical element of their pre-service teacher preparation program. This was because their practicum experiences offered them genuine chances to improve their teaching abilities as well as their familiarity with inclusive education.

8.4. Professional Development and Support

To successfully adopt co-teaching and inclusive education methods, the results of this research highlighted the significance of continued professional development and support within pre-service teacher training programs. Seventy percent of the pre-service teachers said that taking part in professional development workshops on co-teaching and inclusive education gave them valuable knowledge, strategies, and resources that helped them improve their understanding of co-teaching and inclusive pedagogy and how to implement it.

They expressed how important these chances for professional growth and development were to them as future educators, citing how important it was for their professional progress. The interview data also suggested that teacher educators had a crucial role in providing pre-service teachers with continual assistance throughout their program. They noted that receiving consistent feedback, direction, and mentorship from more experienced instructors assisted them in improving their co-teaching abilities as well as their inclusive pedagogy. In addition, pre-service teachers have emphasized the need for ongoing support and chances for professional development after they graduate from their teacher preparation program. This support and development might come in the form of follow-up seminars, coaching, or mentoring opportunities. They anticipated that having access to continual assistance would increase their capacity to successfully adopt co-teaching and inclusive education techniques in the classrooms in which they would later teach.

The findings of this study indicated that pre-service teacher preparation programs that include collaborative learning, inclusive pedagogy, field experience, and ongoing professional development and support are effective in preparing pre-service teachers to implement co-teaching and inclusive education practices. The findings were based on an analysis of the data that was collected from the participants in the study. These results not only give a complete knowledge of the primary themes that emerged from the data, but they also show the relevance of these themes in creating pre-service teacher training programs for inclusive education. These results provide an important contribution to the current body of research on pre-service teacher preparation and co-teaching, and they offer insightful information to teacher educators, legislators, and other stakeholders interested in inclusive education practices.

9. Discussion

The results of this research provide fresh insight into the efficiency of pre-service teacher preparation programs in educating future educators to engage in practices of co-teaching and inclusive education. The findings shed light on the important part that inclusive pedagogy, collaborative learning, field experience, and continuous professional development and support play in the process of preparing pre-service teachers for inclusive education and co-teaching.

According to the results, pre-service teachers who engaged in collaborative learning experiences such as co-teaching reported having improved their grasp of co-teaching models, improved their pedagogical abilities, and boosted their confidence in their ability to work with learners from a variety of backgrounds. This implies that collaborative learning opportunities during pre-service teacher education programs may successfully prepare future teachers to work in inclusive classrooms by providing them with real-world experiences and chances to practice inclusive pedagogy. This can be accomplished by giving them real-world experiences and opportunities to collaborate with students from a variety of backgrounds.

The findings also shed light on the necessity of inclusive pedagogy in the training of future teachers. Pre-service teachers who indicated better levels of preparedness to use inclusive practices in their future classrooms were those who got formal instruction and training in inclusive pedagogy. This highlights the importance of pre-service teacher education programs prioritizing inclusive pedagogy as a fundamental component and providing students with the information, tools, and resources required to establish inclusive learning environments for all children.

The results put an even greater emphasis on the significance of gaining field experience throughout the pre-service teacher training process. Pre-service teachers who participated in field activities such as student teaching and practicum reported having a greater knowledge of the problems and possibilities presented by co-teaching and inclusive education in actual classroom environments. This shows that pre-service teachers benefit greatly from participating in field activities as a means of bridging the gap between theory and practice and preparing them for the challenges of co-teaching and inclusive education in real teaching environments.

The findings also highlight how important it is for pre-service teachers to have access to continued professional development and support throughout their careers. Teachers-to-be who received constant support, feedback, and

mentorship from experienced teachers throughout their program and beyond reported greater levels of confidence and preparedness to apply co-teaching and inclusive practices in their future classrooms. This was especially true for pre-service teachers who were mentored by more than one instructor. This underscores the need for pre-service teachers to be provided with continuous professional development opportunities and support networks by teacher education programs, even after they have graduated, to guarantee their continued growth and success as inclusive educators.

Numerous studies [20, 21, 22, 23] have underscored the importance of utilizing cooperative learning as a means of preparing prospective educators for the task of teaching in inclusive classroom settings. The rationale behind the employment of collaborative learning lies in its potential to enable prospective educators to interact with learners from diverse backgrounds, apply inclusive pedagogical approaches, and introspect on their instructional methodologies within a secure and supportive environment [24, 25, 26]. According to Legrain et al [27], the efficacy of collaborative learning experiences may be contingent upon the caliber of collaboration and level of support provided to pre-service educators. As such, this factor should be duly considered.

The significance of pre-service teacher education programs in promoting inclusive pedagogy has been recognized by scholars such as Sokal et al [28] and Walton & Rusznyak [29]. Inclusive pedagogy necessitates that pre-service teachers possess a comprehensive understanding of diversity, equality, and inclusion [30, 31] to proficiently execute their teaching duties. This involves creating classroom environments that cater to the requirements and strengths of all students. The findings of recent research indicate that a significant number of teacher education programs provide only rudimentary coverage of this matter [32]. Therefore, it is imperative to ensure that prospective teachers undergo comprehensive instruction in inclusive pedagogy.

Field experience is a valuable opportunity for pre-service teachers to apply their theoretical knowledge in a practical context [33, 34]. The lack of preparedness reported by pre-service teachers in dealing with classroom issues underscores the importance of providing them with adequate support during their field experiences, as highlighted by Nganga et al [35] and Jarrah [36]. Fuertes-Camacho et al [37] have identified mentoring, coaching, and reflective practice as some of the methods that professionals may employ to offer assistance.

It is imperative to ensure that upcoming educators are equipped to maintain and enhance their expertise and understanding throughout their professional lives. This can be achieved by offering them continuous professional development and support [38, 39]. The provision of aid through professional learning communities, coaching, and mentorship is a form of support [40]. Therefore, opportunities must be tailored to cater to the specific needs of each pre-service teacher.

9.1. The Implication of the Study

The results of this investigation emphasize the necessity of incorporating inclusive pedagogy, collaborative learning, field experience, and continuous professional development and support as fundamental components of pre-service teacher education programs. The study highlights the significance of providing prospective educators with the chance to engage in co-teaching and collaborative practices with students from diverse backgrounds within the educational setting.

The study emphasizes the necessity of acquiring practical experience in the field to equip prospective educators with the skills and knowledge necessary to navigate the challenges of co-teaching and inclusive education in the classroom. Sustained professional development and support networks from teacher education programs are crucial for pre-service teachers to foster their inclusive teaching skills and ensure their sustained growth and success as educators upon entering the workforce.

The results of the study indicate that teacher education programs should consider adopting a collaborative and inclusive approach to adequately equip teachers to address the diverse needs of their students. The prioritization of inclusive pedagogy, collaborative learning, field experience, and continuous professional development and support can enhance the ability of pre-service teachers to cultivate an inclusive learning environment that accommodates the needs of all students, including those from diverse backgrounds and with diverse learning needs.

10. Conclusion

The results of this research, taken as a whole, call into question established ideas about how teachers should be prepared and bring attention to the critical need of developing new and inclusive methods for pre-service teacher education. To properly prepare future educators for co-teaching and inclusive education practices, the findings of the research give useful insights that may be used by teacher educators, legislators, and other stakeholders in the process of redesigning and enhancing pre-service teacher preparation programs. These ground-breaking results have important implications for the area of teacher education and add to the current literature by giving a complete knowledge of the essential elements that form excellent pre-service teacher preparation programs for inclusive education. Additionally, these findings make a substantial contribution to the field of education in general.

11. Conflict of interest

The authors declare that there is no conflict regarding the publication of this paper.

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