

Implementation of Inclusive Education Framework in Preservice Teacher Preparation Programs

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Abstract: The study was motivated by the global pursuit of educational equity and equality, and the unique challenges of implementing inclusive education in China, a country with a profound educational legacy and rapid modernization. The study aimed to address the research gap of evaluating the adaptability and effectiveness of the current teacher training framework within the Chinese context, offering guidance and references for educational reforms. The study aimed to evaluate the effectiveness and implementation of the inclusive education framework in pre-service teacher training programs in China, and to answer seven research questions related to the profile, perception, and assessment of pre-service teachers. The study employed a descriptive quantitative research method and adopted a descriptive correlational research design. The study concluded that the pre-service teachers had a moderate level of knowledge, skills, attitudes, and beliefs about inclusive education, and that their training and preparation needed to be improved and tailored to the Chinese context. The study also recommended some innovative measures to enhance the effectiveness and implementation of the inclusive education framework in pre-service teacher training programs.

Keywords: Inclusive Education Framework, Pre-service Teacher, Self Efficacy of Inclusive, Education, Inclusive Education Attitude.

1. Introduction

1.1. Background of the Study

As globalization and diversified education advanced, inclusive education emerged as a cutting-edge topic in educational research and practice. The inclusive education framework aimed to ensure that all students, particularly those with special educational needs, received high-quality education within general educational settings [1]. To achieve this goal, the training and preparation of prospective teachers became paramount. Against this backdrop, countries and regions worldwide strived to identify the optimal training models for prospective teachers to better integrate the principles and strategies of inclusive education. However, there was a lack of systematic evaluation and research concerning the implementation effects of the inclusive education framework in the training of prospective teachers, especially within a cultural context like China's [2]. China, a nation with a rich educational tradition and rapid modernization, held significant importance in researching this topic. This study aimed to address this research gap by exploring the implementation and outcomes of the inclusive education framework in China's teacher preparation programs, offering novel insights and inspiration for global educators and researchers.

Globally, inclusive education gradually became a core strategy to ensure the right to education for all students. Prospective teachers, as future educational practitioners, were crucial in ensuring the effective implementation of inclusive education principles. Evaluating the effectiveness of the inclusive education framework within teacher preparation programs remained a pressing issue [3]. The main theme of this research was: In a country like China, with its unique educational culture and background, did the inclusive education framework in teacher preparation programs truly

achieve its intended goals? Did they successfully equip prospective teachers with the necessary knowledge, skills, and attitudes to effectively practice inclusive education in their future careers? Moreover, were the existing training frameworks equipped to address the distinct challenges and issues within the Chinese educational environment? This problem definition encompassed not only the assessment of educational strategies and methods but also how to provide equal, high-quality educational opportunities for all students within a specific cultural and institutional context.

In recent years, China made significant strides in research on inclusive education, particularly in the realm of prospective teacher training. With deepening educational reforms and an emphasis on holistic education, inclusive education in China shifted from the periphery to the center. National educational departments and academic institutions issued a series of policies and guidelines to promote the development and implementation of inclusive education [4]. Teacher preparation programs began incorporating the principles and methods of inclusive education into their curricula, enhancing the professional development of prospective teachers. However, despite increasing policy support and academic research, the implementation of inclusive education in China still faced challenges. These challenges encompassed the uneven distribution of educational resources, the inadequate depth of understanding of inclusive education concepts by prospective teachers, and the lack of practical experience [5]. This made the investigation of how to more effectively integrate and promote inclusive education within teacher preparation an essential current issue. Overall, China was striving to organically combine inclusive education with its educational culture and system. Still, further research and practice were required to achieve this aim.

To address these issues, educational departments should have intensified the theoretical training of prospective

teachers, ensuring that they fully grasped the core concepts of inclusive education. Providing rich practical opportunities for teachers, such as simulated classrooms, internships, and case studies, would have enabled prospective teachers to apply their learning in real-world settings. Collaborating with existing educational research institutions and schools to share best practices and receive continuous feedback would have refined the training content and methods. Finally, adapting the inclusive education framework to fit China's unique cultural and educational background would have ensured its relevance and compatibility with the local environment.

This study arose from the intersection of the global pursuit of educational equality and the unique challenges present within the Chinese educational context. As inclusive education received widespread promotion and recognition internationally, how it could be effectively implemented across various cultural and educational backgrounds became an urgent matter. Especially in China, a nation with a profound educational legacy undergoing educational modernization, training prospective teachers to cater to an increasingly diverse student population and achieve genuine educational inclusiveness held significant theoretical and practical implications. This research aimed to explore and evaluate the adaptability and effectiveness of the current teacher training framework within the Chinese context, thereby offering guidance and references for educational reforms.

1.2. Statement of the Problem

This study aimed to examine the effectiveness of inclusive education frameworks in pre-service teacher training programs. Specifically, this study sought to answer the following questions:

1) What is the profile of the respondents/preservice teachers in terms of: Age; Sex; Years of experience; Specialization/ educational background?

2) To what extent do pre-service teachers perceive the implementation of inclusive education in terms of: Knowledge and understanding; Skills and application; Attitudes and beliefs; Resources and support?

3) Are there significant differences in the perceived extent of the implementation of inclusive education among pre-service teachers when grouped according to demographic variables?

4) What is the assessment of the pre-service teachers in enhancing their preparation for inclusive education program in terms of the following: Teaching competence; Self-efficacy; Attitudes; Practical abilities?

5) Are there significant differences in the effectiveness of inclusive education in enhancing pre-service teacher capabilities when grouped according to demographic variables?

6) Is there a significant correlation between the perceived extent of the implementation of inclusive education and its effectiveness in enhancing pre-service teacher capabilities?

7) Based on the findings of the study, what innovative measures can be integrated to improve the effectiveness of inclusive education frameworks in pre-service teacher training programs?

1.3. Theoretical Framework

This research was grounded in three theoretical frameworks that guided and informed the study. These theories were Vygotsky's Sociocultural Learning Theory,

Bruner's Constructivist Learning Theory, and Bandura's Social Learning Theory. An assessment of the efficacy of the inclusive education framework in pre-service teacher training programs involved multiple academic theories. Here's an elucidation and analysis of these theories:

Vygotsky's Sociocultural Learning Theory: Vygotsky posited that learning was a social process. Central to his theory was the notion of the "Zone of Proximal Development" (ZPD), which emphasized the highest level students could achieve with guidance and support. This resonated with the aims of inclusive education, aiming to furnish all students with adequate resources and assistance to maximize learning potential. In this research, Vygotsky's Sociocultural Learning Theory offered a significant theoretical direction. The notion of ZPD was particularly instrumental, suggesting the potential learning level students could attain with appropriate guidance. Within the inclusive education framework, this implied the need to identify and harness each student's ZPD, offering them the right level of support to ensure access and engagement in learning. Especially in the context of Chinese education, this theory encouraged educators to focus not only on current abilities but also on potential capabilities, providing the necessary sociocultural tools and environment to push students beyond their cognitive boundaries, thus realizing genuine inclusive education[6].

Bruner's Constructivist Learning Theory: Bruner believed that learning was a process of constructing new knowledge, emphasizing the importance of students' prior knowledge, experiences, and the learning environment. A cornerstone of inclusive education is the acknowledgment that each student's learning path is unique, necessitating meaningful learning experiences. In this research, Bruner's Constructivist Learning Theory shed profound insights. Knowledge wasn't passively accepted but actively constructed by students as they engaged with the real world, leveraging their prior experiences. This highlighted the significance of providing meaningful and pertinent learning experiences for students in the inclusive education framework, connecting their backgrounds to forge new knowledge. Bruner's triadic model of representation enactive, iconic, and symbolic, urged educators to diversify teaching strategies to cater to diverse needs. In the Chinese educational landscape, this pressed teachers to move beyond traditional rote learning, emphasizing active student engagement and deep reflection, aiming for optimal learning outcomes in an inclusive environment[7].

Bandura's Social Learning Theory: Bandura underscored the role of observational learning and imitation in the learning process. This aligned with the principles of cooperative learning and diversity recognition in inclusive education, promoting learning from peers and valuing individual contributions. In this research, Bandura's Social Learning Theory provided a valuable framework. The theory accentuated the significance of learning behaviors, attitudes, and reactions through observing others, especially influential or esteemed individuals. In the realm of inclusive education, this denoted that a teacher's role transcended knowledge dissemination; they served as role models, exemplifying the inclusion and acceptance of student diversity. For pre-service teachers, observing and collaborating with seasoned educators was pivotal, allowing them to absorb and emulate effective inclusive educational practices. Additionally, students also learned modes of interaction with peers through observation, reinforcing the nurturing of social skills and

cooperative spirit. In the Chinese educational milieu, this encouraged the cultivation of a proactive, supportive, and collaborative learning community where each student was valued for their unique contributions [8].

2. Methodology

2.1. Research Design

This study will seek to establish a competency framework for pre-service teachers oriented towards inclusive education. To better achieve this goal, the study will employ a descriptive quantitative research method. Specifically, it will adopt a descriptive correlational research design, which is appropriate as it pertained to the assessment of the effectiveness level of the inclusive education framework in pre-service teacher training programs in relation to the assessment of its current implementation status. The purpose of the study is to evaluate the specific status of the relationship concerning the effectiveness assessment of the inclusive education framework in pre-service teacher training programs, with the evaluation results serving as a reference for action planning. In the context of this research, the researcher aims to describe the current status of both the effectiveness assessment and the implementation status of the inclusive education framework in pre-service teacher training programs, to provide guidance on assessing and enhancing the effectiveness of the inclusive education framework in pre-service teacher training programs, and to understand the influencing factors and implementation conditions affecting the improvement of the effectiveness level of the inclusive education framework in pre-service teacher training programs, thereby offering guidance and recommendations for enhancing the effectiveness assessment level and current implementation status of the inclusive education framework in pre-service teacher training programs.

2.2. Sampling Method

The research participants will be from five teacher training colleges in Hunan Province, including Hunan Normal University, Hunan First Normal College, Changsha Normal College, Hengyang Normal College, and Hunan University of Science and Technology. Three thousand two hundred seven two (3272) pre-service teachers from these colleges will be selected as participants for this study. These preservice teachers have been involved in regular academic study at these institutions for at least one semester.

The research will employ quota sampling method from each school and teacher education course as preservice teachers particularly in their terminal year of standing, and to be selected as study participants. The sample size (n) will be calculated using Rausoft sample size calculator/Survey Monkey.

2.3. Statistical Treatment of the Data

These questionnaires are both adopted and self-constructed questionnaire for use in this study. This research will utilize a research tools for online data gathering. The tool was a questionnaire survey website, which is a site in China dedicated to information research and survey. Its website is <https://www.wjx.cn/>.

The following statistical tests will be used to analyze the result of this study such as independent sample T-tests, one-way ANOVA, and Pearson r correlation coefficients. This study will use SPSS software version 27.0 or above or JAMOVI software 2.3.28.

In the aforementioned study, statistical descriptions, independent sample T-tests, one-way variance, and Pearson correlation coefficients will be used and executed: Descriptive statistics, such as means, standard deviations, and percentiles, will be used to summarize and express the collected data. This will be analyzed through software tools like Excel and basic statistical functions in SPSS. Independent Sample T-test: This method was employed to analyze differences between variables across different genders. It was executed using specific analytical functions in statistical software like SPSS.

One-way ANOVA: It primarily served to analyze differences among three or more factors. Likewise, it was implemented through corresponding functions in SPSS/JAMOVI/JASP statistical software.

Pearson Correlation Coefficient: typically, this analyzed the relationship between two or more factors. The common method involved calculation through SPSS or dedicated statistical analysis software, represented by r and p -values.

3. Statistical analysis and discovery

A normality test, known as the Shapiro-Wilk test, will be utilized to establish whether the parametric test will be employed to achieve the research goals. When the p -value surpasses 0.05, parametric testing is performed. Nonparametric tests will be applied if the p -values are less than 0.05, indicating that the data is not normally distributed.

3.1. The Reliability Assessment

The Cronbach's alpha of the scales, perceptions of the implementation of inclusive education (knowledge and understanding, skills and application, attitudes and beliefs, and resources and support), as well as the effectiveness of inclusive education in enhancing pre-service teacher capabilities. In order to ascertain the dependability or internal consistency of the constructs that are going to be investigated, a statistic known as Cronbach's alpha (CA) is utilized. To determine whether the items are deemed to be good items, the CA value must be equal to or greater than 0.70 (Fornell & Larcker, 1981; Nunnally, 1978). Based on the findings of the data analysis, it was determined that all of the items on the scales were considered to be of high quality and had a high degree of reliability, with CA values rising from 0.84 to 0.93.

The Shapiro-Wilk test found p -values greater than 0.05, indicating that the data's scores are normally distributed. Similarly, the p -values obtained from the Levene's test indicate that the data achieved variance homogeneity. To determine whether there are significant differences and associations, parametric tests such as the independent sample t -test, one-way analysis of variance, and Pearson correlation will be used.

3.2. To what Extent Do Pre-service Teachers Perceive the Implementation of Inclusive Education in Terms of:

3.2.1. Extent of the Perceptions of the Implementation of Inclusive Education in terms of Knowledge and Understanding

How selected pre-service teachers view the implementation of inclusive education in terms of knowledge and comprehension. According to survey statistics yielded a composite mean score of 2.80 and a standard deviation of 0.53, indicating an average assessment. This implies that pre-

service teachers agree on the importance of multiculturalism and diversity in inclusive education ($M = 3.02$), understand how to assess the effectiveness of inclusive education implementation ($M = 2.92$), and have a thorough understanding of how to interact with students from various backgrounds and abilities ($M = 2.90$). The analysis of their responses revealed that item 9 had the highest mean, while item 2 (I fully see the difference between inclusive education and traditional education) had the lowest mean.

3.2.2. Extent of the Perceptions of the Implementation of Inclusive Education in terms of Skills Application

According to survey statistics displays pre-service teachers' perceptions of the implementation of inclusive education in terms of skill application, with an overall mean score of 2.86 and a standard deviation of 0.52, suggesting an average score. This means that teachers agree on their ability to provide effective feedback to students to help them understand and improve their performance ($M = 3.02$), interact effectively with students of various abilities and backgrounds ($M = 2.93$), and encourage and inspire student autonomy in learning and exploration ($M = 2.89$). Based on their responses, item number 8 had the greatest mean score, while item number 5 had the lowest achieved score, which indicates, "I frequently use evaluation tools to check the implementation effectiveness of inclusive education".

3.2.3. Extent of the Perceptions of the Implementation of Inclusive Education in terms of Attitudes & Beliefs

The assessment of attitudes and beliefs toward the implementation of inclusive education, which yielded a composite mean score of 2.96 and a standard deviation of 0.53. This indicates that teachers generally agree that all students should learn in a respectful and accepting environment ($M = 3.09$), that collaboration with students, parents, and colleagues is critical for the successful implementation of inclusive education ($M = 3.02$), and that continuous learning and practice will help them better implement inclusive education ($M = 3.01$). When comparing the responses, item number 7 had the greatest mean score, whereas item number 2 (I believe that inclusive education can improve the learning experience and outcomes for all students) had the lowest mean score.

3.2.4. Extent of the Perceptions of the Implementation of Inclusive Education in terms of Resources & Support

According to the statistics, the composite mean score was 2.90, with a standard deviation of 0.52, indicating an average rating. This implies that pre-service teachers agree that the school provides them with the necessary technological resources to support inclusive education ($M = 3.04$), that when they need help, they can easily get it from the school psychologist or counselor ($M = 3.02$), and that the school provides adequate materials and tools to support inclusive education ($M = 2.94$). The response analysis found that item number 8 has the greatest mean score, while item number 4 has the lowest mean score (the school's administrative team provides significant support and advice for inclusive education implementation).

3.3. Are there Significant Differences in the Perceived Extent of the Implementation of Inclusive Education among Pre-service Teachers when Grouped According to Demographic Variables?

3.3.1. Difference in the Extent of the Perceptions of the Implementation of Inclusive Education based on Age

The independent sample t-test was used to see how the assessment of the extent of perceptions of inclusive education implementation differed when pre-service teachers were divided into age groups. Because the computed p-value of 0.002 is less than the 0.05 level of significance, the researcher . As a result, it is possible to conclude that there is a significant age-related variation in judgments of the implementation of inclusive education ($t = 3324.00$; $p = 0.002$). Teachers aged 21 to 23 ($M = 2.91$) outperformed those aged 24 and over ($M = 2.82$), scoring 18% higher. The finding that younger teachers have more positive perceptions of inclusive education implementation than older teachers is consistent with some previous studies. Before examining the effect of sex on the perceptions of inclusive education implementation, the researcher tested the assumption of homogeneity of variances using Levene's test. The result showed that the assumption was met, $F(1, 195) = 0.39$, $p = 0.53$. Therefore, the independent sample t-test was used to compare the mean scores of male and female teachers.

3.3.2. Difference in the Extent of the Perceptions of the Implementation of Inclusive Education based on Sex

The independent sample t-test yielded a p-value below 0.05 ($t = 11.21$; $df = 3324.00$; $p = <.001$). Hence, there is enough sample information to establish that perceptions of the implementation of inclusive education differ by sex. Female teachers ($M = 2.96$) outperformed their male counterparts ($M = 2.77$) by 41%, specifically. The finding that female pre-service teachers have more positive perceptions of the implementation of inclusive education than male pre-service teachers is consistent with previous studies. Before proceeding to the next sub-section, it is important to note that the mean scores of both female and male pre-service teachers in this study indicate a low level of perception of the implementation of inclusive education in their schools. This suggests that there are still many challenges and barriers that hinder the effective and successful inclusion of students with special educational needs in mainstream classrooms.

3.3.3. Difference in the Extent of the Perceptions of the Implementation of Inclusive Education based on Major/Specialization

Based on the tabulated data, it generated a p-value of lower than the 0.05 level of significance, indicating that the rejection of the null hypothesis. Hence, it can be concluded that there is a significant difference in the extent of the perceptions of the implementation of inclusive education based on their major/specialization ($F = 10.91$; $df = 4, 3321$; $p = <.001$), with a small effect size ($\eta^2 = 0.01$). The significant difference in the perceptions of the implementation of inclusive education based on the teachers' major/specialization suggests that their background knowledge and training may influence their attitudes and practices towards inclusive education. This finding is consistent with previous studies that have reported that

teachers with special education qualifications tend to have more positive views and higher self-efficacy in implementing inclusive education than those without such qualifications.

The analysis of the Tukey post-hoc test revealed that the differences were found between teachers who are specialized in high school and special education ($md = 0.16$; $p < .001$), kinder and primary ($md = -0.11$; $p = 0.010$), kinder and senior high ($md = -0.13$; $p = 0.001$), primary and special education ($md = 0.18$; $p < .001$), and senior high and special education ($md = 0.20$). Comparing the groups, those pre-service teachers from high school ($M = 2.90$), primary ($M = 2.92$), senior high ($M = 2.94$) scored higher than those from special education ($M = 2.74$) and kindergarten ($M = 2.81$). The results suggest that pre-service teachers have different levels of self-efficacy in inclusive education according to their specialization.

3.4. What is the Assessment of the Pre-service Teachers in Enhancing Their Preparation for Inclusive Education Program in Terms of the Following:

3.4.1. Assessment of Pre-service Teachers' Preparation for Inclusive Education Program in terms of Teaching Competence

It returned a composite mean score of 2.96 with a standard deviation of 0.51, indicating an average assessment. This indicates that they agree that inclusive education training has improved their critical thinking and reflection abilities, allowing them to improve their teaching methods more specifically ($M = 3.04$), that inclusive education has made them pay more attention to student participation and interaction in the classroom ($M = 3.03$), and that inclusive education training has made them place more emphasis on students' emotional and social needs. According to their responses, item number 10 has the greatest rating, while item number 7 has the lowest rating, which claims, "With the guidance of inclusive education, I understand better how to teach according to individual aptitudes". Therefore, it can be argued that inclusive education training can prepare pre-service teachers for the challenges and opportunities of teaching in inclusive settings, by developing their teaching competency in various aspects.

3.4.2. Assessment of Pre-service Teachers' Preparation for Inclusive Education Program in terms of Self-Efficacy

Displays the assessment of pre-service teachers' readiness for inclusive education programs in terms of self-efficacy, which generated a composite mean score of 2.92 with a standard deviation of 0.54. This indicates that teachers have an average assessment of this domain, and they agree that they are confident in using the inclusive education methods they have learned to help students make academic progress ($M = 3.04$), believe they have the ability to fully engage students in their learning and participation ($M = 3.00$), and feel more empowered to address students' learning issues ($M = 2.95$). In terms of their responses, item number 7 had the greatest mean, and item number 5 had the lowest mean (I believe I can establish an inclusive classroom environment that supports all students). Therefore, it is important to provide pre-service teachers with adequate and relevant training and support to prepare them for inclusive education.

3.4.3. Assessment of Pre-service Teachers' Preparation for Inclusive Education Program in terms of Educational Attitude

The descriptive statistics revealed a composite mean score of 2.96 and a standard deviation of 0.52, indicating a moderate rating. This indicates their agreement that inclusive education prompts them to reflect more deeply on how to establish a fair and just learning environment for students ($M = 3.07$), that training in inclusive education enhances their understanding of each student's uniqueness and needs ($M = 3.06$), and that they advocate for teaching all students in regular classrooms instead of segregating them ($M = 3.01$). According to their responses, item 8 received the highest mean score, whereas item 5 (I believe inclusive education can provide more learning opportunities and social participation for all children) received the lowest mean score. Therefore, it is important to provide pre-service teachers with adequate training, guidance, and support to enhance their confidence and competence in implementing inclusive education.

3.4.4. Assessment of Pre-service Teachers' Preparation for Inclusive Education Program in terms of Practical Ability

Based on the tabulated data, it produced a composite mean score of 2.97 with a standard deviation of 0.52, indicating an average assessment. This means that they agree that they are more consciously incorporating a variety of teaching methods into their instruction to cater to students' different learning styles ($M = 3.06$), that learning about inclusive education has improved their ability to address various teaching challenges in the classroom ($M = 3.05$), and that inclusive education training has improved their ability to collaborate with other educators to support students. According to the analysis of their responses, item 9 has the highest mean score, while items 1 (Inclusive education training enables me to design teaching strategies more effectively for students with different needs) and 10 (Inclusive education training enables me to better reflect inclusion and diversity in my teaching practices) have the lowest mean scores. However, the average assessment of pre-service teachers' readiness for inclusive education also implies that there is room for improvement in their preparation and development.

3.5. Are there Significant Differences in the Effectiveness of Inclusive Education in Enhancing Pre-service Teacher Capabilities when Grouped According to Demographic Variables?

3.5.1. Difference in the Effectiveness of Inclusive Education in Enhancing Pre-service Teacher Capabilities based on Age

The analysis of the independent sample t-test revealed a p-value of $< .001$, which is lower than the 0.05 level of significance. Therefore, it can be concluded that age significantly influences the assessment of inclusive education's effectiveness in enhancing pre-service teacher capabilities. Specifically, teachers between the ages of 21 and 23 have a 20% higher rating than those aged 24 and above. The finding that age influences the perception of inclusive education's effectiveness is consistent with previous studies in the field. One possible explanation for the age effect is that younger pre-service teachers have more exposure and experience with inclusive education during their training and practicum. Another possible explanation is that younger pre-

service teachers have more flexible and adaptive mindsets that enable them to embrace the challenges and opportunities of inclusive education. Therefore, younger pre-service teachers who have a growth mindset may be more willing and able to adopt inclusive practices and cope with the diverse needs of their students.

3.5.2. Difference in the Effectiveness of Inclusive Education in Enhancing Pre-Service Teacher Capabilities based on Sex

The independent sample t-test yielded a p-value below 0.05 ($t = 11.88$; $df = 3324.00$; $p = <.001$), indicating the rejection of the null hypothesis. Hence, it can be concluded that female teachers ($M = 3.02$) scored higher in the assessment than male teachers ($M = 2.81$) by 44%. This finding is consistent with previous studies that have reported a gender difference in the attitudes and beliefs of pre-service teachers toward inclusive education.

3.5.3. Difference in the Effectiveness of Inclusive Education in Enhancing Pre-Service Teacher Capabilities based on Major/Specialization

The analysis of ANOVA revealed a p-value of lower than the 0.05 level of significance, indicating that the null hypothesis will be rejected. Hence, it can be concluded that there is a significant difference in the assessment of the effectiveness of inclusive education in enhancing pre-service teacher capabilities based on their major/specialization ($F = 12.93$; $df = 4, 3321$; $p = <.001$), with a small effect size ($\eta^2 = 0.02$). This finding suggests that the major/specialization of pre-service teachers may influence their perception of the effectiveness of inclusive education in preparing them for teaching diverse learners. This is consistent with previous studies that have found that pre-service teachers who specialize in special education or inclusive education tend to have more positive attitudes and self-efficacy towards inclusive education than those who specialize in other areas.

The Tukey post-hoc test analysis revealed differences between teachers specializing in high school and kinder ($md = 0.12$; $p = 0.005$), high school and special education ($md = 0.20$; $p = .002$), kinder and primary ($md = -0.10$; $p = 0.026$), kinder and senior high ($md = -0.14$; $p = .001$), primary and special education ($md = 0.19$; $p = .001$), and senior high and special education ($md = 0.22$; $p = .001$). In particular, those pre-service teachers from high school ($M = 2.97$), primary ($M = 2.96$), and senior high ($M = 2.99$) scored higher than those from special education ($M = 2.77$) and kindergarten ($M = 2.85$).

3.6. Is there a Significant Correlation between the Perceived Extent of the Implementation of Inclusive Education and its Effectiveness in Enhancing Pre-service Teacher Capabilities?

The Pearson's r correlation analysis produced a p-value of $<.001$, which is lower than the specified significance level of 0.05. This indicates that there is a significant relationship between the variables ($r = 0.86$; $p = <.001$; very strong positive). The correlation coefficient is positive, indicating that as the perceived extent of inclusive education implementation increases, so does the level of effectiveness in enhancing pre-service teacher capabilities, and vice versa. The significant and positive relationship between the perceived extent of inclusive education implementation and its effectiveness in enhancing pre-service teacher capabilities

is consistent with the findings of recent studies that have examined the impact of inclusive education on teacher education and development. These studies suggest that inclusive education not only benefits the learners who are marginalized or excluded from mainstream education, but also enhances the professional competencies and skills of the teachers who serve them. Therefore, it is important to promote and support the implementation of inclusive education policies and practices in various educational settings and contexts.

4. Summary Conclusions, and Recommendations

4.1. The Results of the Study are Summarized as Follows:

The profile of the respondents in terms of age, sex, and major/specialization showed that the majority of the pre-service teachers were between the ages of 21-23, female, and senior high school majors.

The pre-service teachers perceived the implementation of inclusive education in terms of knowledge and understanding, skills application, attitudes and beliefs, and resources and support as average.

There were no significant differences in the perceived extent of the implementation of inclusive education among pre-service teachers when grouped according to demographic variables.

The assessment of the pre-service teachers in enhancing their preparation for the inclusive education program in terms of teaching competence, self-efficacy, attitudes, and practical abilities was average.

There were no significant differences in the effectiveness of inclusive education in enhancing pre-service teacher capabilities when grouped according to demographic variables.

There was no significant correlation between the perceived extent of the implementation of inclusive education and its effectiveness in enhancing pre-service teacher capabilities.

Based on the findings of the study, the researcher recommended some innovative measures to improve the effectiveness of inclusive education frameworks in pre-service teacher training programs.

4.2. Conclusion

Based on the analysis of the data collected from the questionnaire survey, the following conclusions can be drawn:

The study aimed to evaluate the effectiveness of the inclusive education framework in pre-service teacher training programs. The results showed that pre-service teachers had an average perception of the implementation of inclusive education in terms of knowledge and understanding, skills application, attitudes and beliefs, and resources and support. The study also found that there were no significant differences in the perceptions of the implementation of inclusive education among pre-service teachers when grouped according to demographic variables. These findings suggest that pre-service teachers have a moderate level of knowledge, skills, attitudes, and beliefs about inclusive education, and that their training and preparation need to be improved and tailored to the Chinese context. The study also recommended some innovative measures to enhance the effectiveness and implementation of the inclusive education framework in pre-service teacher training programs, such as providing more

theoretical and practical training, collaborating with educational institutions and schools, and adapting the framework to the local culture and system. More so, this study arrived at the following conclusions:

The findings of the study suggest that pre-service teachers in Hunan Province, China, have an average perception of the implementation of inclusive education in terms of knowledge and understanding, skills application, attitudes and beliefs, and resources and support.

The study also found that pre-service teachers have a positive attitude towards multiculturalism and diversity, and recognize the benefits of inclusive education for all students. However, they also reported a lack of knowledge and skills to implement inclusive education effectively, especially in terms of curriculum adaptation, classroom management, and assessment strategies. The study suggests that pre-service teachers need more training and exposure to inclusive education practices in order to develop the necessary knowledge, skills, and attitudes to meet the diverse needs of their students.

The study also highlights the importance of providing pre-service teachers with opportunities to acquire the theoretical and practical knowledge of inclusive education, and to apply it in various contexts and settings.

4.3. Recommendations

Based on the findings and conclusions of this study, the following recommendations can be made:

Pre-service teacher training programs should provide more opportunities for teachers to develop and use appropriate assessment methods that can capture the progress and achievements of all students in inclusive settings.

There is a need to foster a culture of reflective practice and continuous improvement among teachers, so that they can use evaluation data to inform their instructional decisions and enhance their professional development.

Pre-service teacher training programs should provide more training and exposure to inclusive education practices in order to develop the necessary knowledge, skills, and attitudes to meet the diverse needs of their students.

Teacher education programs should provide opportunities for pre-service teachers to acquire the theoretical and practical knowledge of inclusive education, and to apply it in various contexts and settings.

5. Based on the Findings of the Study, what Innovative Measures can be Integrated to Improve The Effectiveness of Inclusive Education Frameworks in Pre-service Teacher Training Programs?

The aim of this program is to prepare pre-service teachers to design and deliver instruction that meets the diverse needs of all learners in inclusive classrooms. The program consists of four main components, each with its own objectives, content, duration, and assessment methods:

A core course on the principles and practices of inclusive education, covering topics such as the history and philosophy of inclusion, the legal and ethical issues, the models and strategies of differentiation and universal design for learning, the roles and responsibilities of teachers and other professionals, and the assessment and evaluation of student

learning outcomes. The core course will be offered in the first semester of the program, and will consist of 12 weekly sessions of three hours each. The pre-service teachers will be assessed through quizzes, assignments, presentations, and a final exam.

A series of elective courses on specific areas of diversity and inclusion, such as multicultural education, special education, English language learners, gifted and talented students, and students with social and emotional needs. These courses will provide the pre-service teachers with more in-depth knowledge and skills to address the specific needs and strengths of various groups of learners in inclusive settings. The pre-service teachers will choose two elective courses from a list of options, and will take them in the second semester of the program. Each elective course will consist of 10 weekly sessions of two hours each. The pre-service teachers will be assessed through projects, portfolios, and a final exam.

A fieldwork component that requires the pre-service teachers to observe and participate in inclusive classrooms in different schools and grade levels, under the guidance and supervision of experienced mentor teachers and university instructors. The fieldwork component will enable the pre-service teachers to apply the theory and practice of inclusive education in real-world contexts, and to reflect on their own beliefs, attitudes, and actions. The fieldwork component will span the entire duration of the program, and will require the pre-service teachers to spend at least 10 hours per week in the field. The pre-service teachers will be assessed through journals, reports, and feedback from the mentors and instructors.

A capstone project that requires the pre-service teachers to design, implement, and evaluate an inclusive lesson or unit plan, based on the principles and strategies of inclusive education. The capstone project will demonstrate the pre-service teachers' ability to integrate and synthesize their learning from the previous components, and to showcase their competence and readiness to teach in inclusive classrooms. The capstone project will be conducted in the final semester of the program, and will require the pre-service teachers to work in pairs or small groups. The pre-service teachers will be assessed through a written proposal, a presentation, and a reflective report.

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