



Effectiveness of Inclusive Education Training on Teachers' Knowledge, Attitudes and Classroom Practices: A Study of PITE Training in Dadu and Larkana

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ABSTRACT

This study examined the effectiveness of Inclusive Education Training on teachers' knowledge, attitudes, and classroom practices in Dadu and Larkana, Sindh, Pakistan. The study was significant because effective inclusive education depends substantially on teachers' capacity to understand learner diversity, develop positive attitudes toward inclusion, and translate inclusive principles into appropriate classroom practices. A quantitative, cross-sectional research design was employed, and data were collected from 467 teachers and school management personnel associated with the Inclusive Education Training programme implemented through PITE Nawabshah in collaboration with the Sindh Education and Literacy Department (SELD) and HANDS. An adopted structured questionnaire was used to measure teachers' knowledge, attitudes, and inclusive classroom practices. Data were collected through an online Google Forms questionnaire and subsequently organized in Microsoft Excel before being transferred to IBM SPSS for statistical analysis. Descriptive statistics, reliability analysis, Pearson correlation, multiple linear regression, independent-samples t-test, and one-way ANOVA were used to analyze the data. The findings demonstrated positive relationships between Inclusive Education Training and teachers' knowledge, attitudes, and inclusive classroom practices, while the regression analysis indicated that training significantly contributed to all three outcomes. Significant differences were also observed across teaching-experience groups, while gender differences were identified in teachers' knowledge and classroom practices but not in attitudes. Overall, the study concluded that structured Inclusive Education Training can contribute to strengthening teachers' professional capacity and supporting the implementation of inclusive education in school settings. The findings provide useful evidence for policymakers, teacher-training institutions, and educational administrators seeking to strengthen inclusive education through continuous and practically oriented professional development programmers in Sindh, Pakistan.

Introduction

Inclusive education supports learners with various challenges, including disability, learning challenges, economic status, gender, and others, to learn and participate in mainstream schooling. Inclusive education policies must be converted to everyday teaching practices by teachers. Therefore, teachers must have knowledge and practical skills concerning diversity and adaptation as well as positive attitudes toward learners. Inclusive education training and the skills of trainers prove to be the main factors affecting the knowledge, attitudes, and beliefs of teachers toward inclusive education (Crispel & Kasperski, 2021).

The current study is focused on the Inclusive Education Training conducted by PITE Nawabshah, in collaboration with the Sindh Education and Literacy Department (SELD) and HANDS in Dadu and Larkana. The researcher participated as a Master Trainer and completed various training sessions on inclusive education for teachers and non-teaching staff of schools. The study intends to evaluate if this training and the attitude associated with the structure had a positive influence on the knowledge and practice of teachers in creating an inclusive classroom. This is an important area of the study as, while training can be a positive influence on teachers' understanding of inclusive education, it is also necessary to have a positive attitude and the capability of converting newly gained understanding into actual practices (Kurniawati et al., 2017).

Teachers' knowledge, attitudes, and classroom practices are considered important elements of successful inclusive education. Previous studies show that teachers learn more effectively when training includes practical activities, active participation, and teaching strategies that can be directly applied in the classroom (Cate et al., 2018). Therefore, examining the Inclusive Education PITE Training conducted in Dadu and Larkana can help determine how well the training improves teachers' ability to implement inclusive education. It also provides useful information about the strengths and challenges of teacher training programs aimed at supporting inclusive learning practices in Sindh, Pakistan (Davis, 2019).

Inclusive Education Training

Inclusive Education Training is specialised professional development aimed at teachers and building the knowledge, skills, attitudes, and strategies needed to support the diverse educational requirements of learners within inclusive learning spaces. Inclusive Education Training may cover topics that refer to the diversity of learners, disability awareness, differentiated instruction, classroom adaptations, collaborative teaching, individualised supports, and the elimination of barriers to learning. It is reported that professional development can impact positively teachers' knowledge, skills and beliefs, but there is variation in the degree of impact for each of these outcomes (Khamzina et al., 2024).

The impact of Inclusive Education Training is dependent on the quality and design of professional learning experiences as opposed to teachers simply turning up. Active Learning Training of longer duration and including planning, classroom activities, and provisions for classroom application will result in improved professional practice outcomes (Gafoor & Asaraf, 2009). As reported, knowledge is more easily impacted compared to beliefs and deeply entrenched classroom practices. For the current study, Inclusive Education Training is the main explanatory variable with the PITE-related training in Dadu and Larkana forming the institutional context. The training was examined based on the impact on teachers' knowledge and attitudes and practices of inclusivity in the classroom, rather than measuring participation in training. This approach is in line with the latest research that evaluates professional development in relation to changes in teacher knowledge, beliefs, and skills, and classroom practices (Srivastava et al., 2017).

Teachers' Knowledge of Inclusive Education

Teachers' knowledge of inclusive education includes their understanding of principles, concepts, types of learners, disabilities, barriers, and the pedagogy and strategies used to teach diverse learners. This knowledge underpins the identification of learners' needs and the selection of appropriate teaching methods. Teachers are required to know differentiated instruction, support on an individual basis, Universal Design for Learning, classroom adjustments, and collaborative teaching in order to respond to learners' instructive requirements (Kuyini & Desai, 2007).

Professional development is one of the most known ways of enriching teachers' knowledge. Reflective training helps teachers to form associations between the concepts and information. Inclusive education training has been found to be effective in developing teachers' knowledge, and the most significant effect was reported by (Alsarawi & Sukonthaman, 2023) while Tristani and Bassett-Gunter (2020) found positive differences in teachers' knowledge as a result of training. Therefore, teachers' knowledge of inclusive principles and learning barriers and their selection of appropriate teaching methods was enhanced.

For the evaluation of Inclusive Education Training in Dadu and Larkana, knowledge of teachers is the most critical outcome. The assistance of this training is anticipated to provide teachers of both areas with the understanding of inclusive education and the ability to apply it in their classrooms. Nevertheless, knowledge is not sufficient for the effective implementation of inclusive education. It is instrumental in developing the required attitudes and willingness to implement range of inclusive classroom practices (Masongsong et al., 2023).

Teachers' Attitudes Toward Inclusive Education

Teachers' attitudes toward inclusive education include their beliefs, perceptions, feelings, acceptance, and other-inclusion. positive attitudes can help teachers recognize learner diversity, change their practices, and support inclusion, while negative attitudes can help develop barriers to inclusion (Leung & Mak, 2010). Attitudes are, therefore, a measure of teachers' inclination to practice inclusive education on a psychological level.

Teachers can demonstrate an adequate level of understanding of inclusive education, but still be reluctant to apply inclusive practices if they perceive inclusion as challenging, demanding, or as a poor fit for their teaching contexts. On the other hand, positive attitudes can allow teachers to appreciate diversity as an ordinary part of teaching, and help them find appropriate strategies needed for instructional adaptation (Dapudong, 2014). Professional Development is likely to shift attitudes if it facilitates understanding, addresses uncertainty, and provides examples of instruments to include diverse learners. Nevertheless, it is expected that attitudes will level off, while the understanding and knowledge of inclusive practices will show a significant improvement (Savolainen et al., 2012).

In this study of the PITE Inclusive Education Training in Dadu and Larkana, the attitudes of teachers reflect how much improvement the Training has brought about in their acceptance of diversity, principles of inclusion, and readiness to put these principles into practice. The study takes a comprehensive view of teachers' readiness to include by examining attitudes, knowledge, and teaching practices.

Positive attitudes of teachers likely could be reinforced by enhancing understanding towards disability and learner diversity, eliminating common misconceptions, and presenting examples of hawkers could support learners in the mainstream classroom (Terfassa et al., 2016).

Teachers' Inclusive Classroom Practices

The term inclusive classroom practices describe the methods and techniques teachers use to manage their classrooms and the ways the teachers work to account for and include learning differences in their students. Inclusive classroom practices encompass many diverse methods and supports including, (but not limited to), differentiated instruction, flexible teaching, individualized and collective supports, and positive behavioral interventions. Inclusive classroom practices reflect the most tangible expression of the inclusive education model. They are the behaviors that teachers enact as a result of the intermingling of their attitudes and their knowledge about teaching and learning (Gupta & Tandon, 2018).

Inclusive education is implemented and experienced by students in the classroom and therefore the day-to-day practices of the classroom teacher are critical. There is no substitute for classroom-embedded practice. Policies or training instituted outside the classroom will not effect inclusive practice unless teachers engage in the appropriate strategies. Professional development can include differentiated approaches and opportunities to strengthen an instructor's classroom practice (Alasaf, 2025). Evidence suggests that classroom practice can be enhanced by professional development that incorporates the application of principles and the provision of feedback within an active learning environment (Charitaki et al., 2024).

The inclusive classroom practices documented in this study represent the behavioral outcome of the PITE Inclusive Education training in the districts of Dadu and Larkana. The training was designed to aid teachers in the application of inclusive practices; however, features external to the teacher's classroom (e.g., teaching resources, class size, administrative support, professional development) may also influence the outcome and practice of inclusive classroom teaching.

Because of the importance of knowledge within this structure, teachers with knowledge of inclusive practices are able to apply sustained inclusive teaching practices. Knowledge of inclusive practices will help teachers change their attitudes toward teaching in an inclusive manner. Knowledge of inclusive teaching will help teachers in designing teaching practices to incorporate inclusive teaching. An integrated point of view is provided by (Dapudong, 2014) who recognized professional development as a construction of knowledge, skills and beliefs.

Research Objectives

- To examine the effectiveness of Inclusive Education Training on teachers' knowledge of inclusive education in Dadu and Larkana.
- To assess the effectiveness of Inclusive Education Training on teachers' attitudes toward inclusive education in Dadu and Larkana.
- To determine the effectiveness of Inclusive Education Training on teachers' inclusive classroom practices in Dadu and Larkana.

Problem Statement

The integration of inclusive education practices across classrooms is multifaceted and requires teachers prepared to transform their practices. Whilst some academic works have focused on shifting teachers' knowledge and practices, such efforts have had limited success on attitudes. Improving teachers' knowledge is unlikely to influence teaching practices. There are limited studies on the impact of large-scale inclusive education training of government school teachers in Dadu and Larkana. While the collaboration between the SELD, HANDS, and PITE Nawabshah has implemented inclusive education training, the impact of such training efforts to enhance the knowledge of educators, improve attitudes, and strengthen classroom teaching practices still needs to be adequately assessed (Dapudong, 2013). This research seeks to fill this gap by detailing the impact of PITE's inclusive education training in Dadu and Larkana and by creating information that may help shape future teacher training and inclusive education practices and policies focusing on Sindh.

Significance of the Study

This research evaluates the impact of Inclusive Education Training on government school teachers in Dadu and Larkana and focuses on PITE's training through the partnership of SELD and HANDS. It also evaluates the training in the context of professional learning and teaching practices in inclusive classrooms. The results of the study may help educational decision-makers, teacher trainers, school administrators, and program executors to identify improvements for the area that requires more focus and professional support as well as identify the most productive areas. By providing large-scale training program evidence, the study may guide future inclusive education programs to enhance teachers' professional development and prompt the successful inclusion of education programs and activities in Sindh, Pakistan

Literature Review

Inclusive education is no longer only about placing students with disabilities in regular classrooms. It is about making sure that every student feels included and has an equal chance to learn and participate. Teachers play an important role in creating a supportive classroom environment, but students also need appropriate teaching methods and learning activities that meet their different needs (Werner et al., 2021).

A supportive and effective professional development program is designed to help teachers develop new knowledge, revise old dispositions, and devise new approaches. A primary focus of successful professional development is the relationship between what is learned and what is practiced (San Martin et al., 2021). Durability and flexibility are attributes that are vital for inclusive education (Charitaki et al., 2024). This is a primary area of focus for inclusive education where teachers are provided with design strategies and approaches to help individualize, scale, and customize their practices to meet the diverse needs of their learners.

Most of the research supports the role of professional development in inclusive education with positive results in the area of teachers' knowledge, skills, and beliefs with the strongest focus on the knowledge component (Rajesh & Joseph, 2023), and most specifically on teachers' attitudes and inclusion of teaching strategies in their practice (Baguisa & Ang-Manaig, 2019). Overall, the effects of professional development on teaching and inclusive practice differ depending on the goals, focus, and outcomes of the teaching and learning activities (Jacob & Pillay, 2022).

Inclusive Education Training and Teachers' Knowledge

Effective inclusive education requires teachers to be equipped with knowledge of how to identify and adapt to the varying teaching and learning needs of individual learners. Knowledge of inclusive education is important to develop awareness of different learner needs as well as of barriers and enablers of their engagement and effective participation. Knowledge of teaching

and learning approaches and strategies to support inclusion and participation is vital (Song et al., 2019). This knowledge is also important as a result of professional development (Sirem & Çatal, 2023).

The effect of professional development on teaching knowledge is visible where specific content has been used in a defined manner to engage practitioners in active learning. The impact of the development on the knowledge of inclusive teaching was positive and supportive of the view that professional development can stimulate teachers to think and work on inclusive principles and their application (Coelho et al., 2017). This inclines to the view that content-based, active learning and the relationship of training to teaching are crucial (Kuyini & Desai, 2006). It is expected that the effectiveness of training would be dependent on the background, experience and knowledge of the teachers. (Thomas & Uthaman, 2019) noted that in different teacher groups the effects of professional development on the tested knowledge were different. (Chatzigeorgiadou & Barouta, 2022) also reported variation across teacher training interventions and explained that the content, design, length, and the educational context matter when assessing the effect of professional development on a teacher's knowledge.

Inclusive Education Training and Teachers' Attitudes

The attitudes of teachers form an important aspect of inclusive education. Inclusive educators may incorporate various methods and activities if they maintain positive attitudes towards the diversity of learners. Negative attitudes may develop if educators are concerned about the various aspects of the job, such as time, supplies, and resources, as well as their ability to manage the classroom. Negative attitudes may also develop if educators have difficulty understanding the value of teaching learners with different educational needs and how to meet those needs. Research has indicated that inclusive education is directly related to components of cognitive and emotional belief systems, as well as the element of self-efficacy of teachers. This may also influence the implementation of inclusive education (Burak et al., 2026).

Some of the changes in attitudes observed among teachers may be attributed to the teaching of practical strategies to address the challenges faced in a classroom setting and an increased understanding which reduces the levels of uncertainty. (Dignath et al., 2022) reported a positive attitude of teachers towards inclusive education after a number of teacher training workshops, while (Hellmich et al., 2019) also reported a positive influence of professional development on teachers' beliefs. Generally, positive attitudes of teachers may be more influenced by a number of practical teaching workshops than professional development training.

It should be noted that shifting teacher attitudes requires a longer time commitment from educators than is required for professional development. (Supriyanto, 2019) reported that professional development workshops generally addressed the teachers' concerns and may have influenced the teachers' attitudes about inclusion as a framework for understanding, but may not have addressed the deeper concerns about the workload, resources, and classroom conditions.

Inclusive Education Training and Classroom Practices

Inclusive classroom practices demonstrate the behavioral and pedagogical dimensions of inclusive education, and exemplify how teachers cover inclusive principles, attitudes, and knowledge to the design and construction of classroom activities. Examples of these practices include differentiated instruction, personalized assistance or support, teaching activities of varying degrees of formality, learning materials tailored to individual learning needs, differentiated instructional methods, and differentiated learning tasks. Consequently, assessing inclusive education entails assessing what teachers understand and believe, but also how they apply inclusive approaches to their practices (Forlin & Chambers, 2011).

Professional development has the potential to improve classroom practices through the learning and practicing of specific strategies, and can strengthen the inclusion of professional development in inclusive teaching practices. According to (Mosia & Kotelo, 2024), there was a moderate positive effect of professional development on the skills of teachers related to inclusive education. Likewise, differentiated instruction has been the focus of a number of research studies, which indicate that professional learning can improve teachers' knowledge, attitudes, and practices in inclusive education. Therefore, inclusivity training is likely to have an impact on teaching practices when it is designed to meet teachers' classroom-based, practical, and pedagogical needs.

If teaching and learning practices were implemented innovatively, the transfer of professional learning to classroom practices would likely be facilitated, as implementation of teaching and learning practice innovations can serve as a strong incentive for teachers to adopt such new practices when professionally supported. Implementation of such innovative teaching and learning practices would provide an opportunity for the professional development of teachers through following up teaching and learning

practices in an organized and focused manner. However, this would also depend on the class size, the level of formal support, teaching resources, and whether professional development is sustained over a period of time (Paseka & Schwab, 2020). Therefore, the effectiveness of Inclusive Education Training should also consider how teachers engage with and implement inclusive strategies within their classrooms (Pappas et al., 2018).

Considering the dimensions of inclusive teaching capacity, knowledge puts teachers in a position to understand and articulate their responses to the diversity of learners. Attitudes represent teachers' predisposition and beliefs about inclusion. Classroom practices reflect the actual inclusion of all learners. (Opoku, 2016) describe knowledge, skills and inclusivity, and beliefs as interrelated outcomes of professional development, and claim that professional development is critically important to evaluating and understanding students' learning needs. (Kamran et al., 2023) also defend the need to integrate professional knowledge within teaching actions from a holistic perspective, where the pillars of teaching and professional actions are integrated.

Research Gap

Although international research indicates that professional development can improve teachers' knowledge, skills, and beliefs regarding inclusive education, its effects vary across outcomes, and evidence regarding the transfer of training into sustained classroom practice remains less consistent. In Pakistan, previous studies have mainly focused on teachers' attitudes, preparedness, perceived barriers, and training needs, with limited research evaluating a specific large-scale in-service Inclusive Education Training programmer across knowledge, attitudes, and classroom practices simultaneously. Recent evidence also suggests a continuing gap between teachers' theoretical understanding and the practical implementation of inclusive pedagogy in government schools (Tristani & Bassett-Gunter, 2020). Therefore, the present study addresses an important empirical gap by examining the effectiveness of the PITE Inclusive Education Training implemented in collaboration with SELD and HANDS in Dadu and Larkana, providing district-specific evidence on teachers' knowledge, attitudes, and inclusive classroom practices.

Hypotheses

- **H1:** There is a significant positive relationship between Inclusive Education Training and teachers' knowledge of inclusive education.
- **H2:** Inclusive Education Training significantly predicts teachers' knowledge, attitudes, and inclusive classroom practices.
- **H3:** There is a significant difference between male and female teachers in their knowledge, attitudes, and inclusive classroom practices following Inclusive Education Training.
- **H4:** There is a significant difference in teachers' knowledge, attitudes, and inclusive classroom practices across different demographic groups.

Methodology

Research Design

A quantitative, cross-sectional research design was employed to evaluate the effects of Inclusive Education Training on teachers' knowledge and attitudes and classroom practices. The use of the quantitative approach was justified since data were collected through a structured questionnaire and analyzed based on the principles of statistics. The cross-sectional design was appropriate since data were collected from respondents in a single case as opposed to a longitudinal case. This design was suitable for this study to assess inclusiveness of the education training and to analyze relationships and differences of the study variables.

Population

The study population was teachers and other staff employed at government schools in Sindh and Punjab, Pakistan, and was specifically focused on participants of the Inclusive Education Training that was implemented through PITE Nawabshah in collaboration with the Sindh Education and Literacy Department (SELD) and HANDS. The geographical scope of the study was limited to the districts of Dadu and Larkana, where the program was delivered to Primary School Teachers as well as School Management and Head Teachers and other school staff, male and female. The researcher acted as one of the Master Trainers and delivered Inclusive Education Training to the participating teachers and school staff. The population was appropriate as teachers

and school staff play a major role in implementing inclusive educational principles at the classroom level; therefore, their knowledge, attitudes, and practices of teaching inclusively were essential to gauge the effectiveness of the training.

Target Audience

The Target Audience primarily consisted of Primary School Teachers and school management staff, male and female Head Teachers and School Management Representatives, who participated in the Inclusive Education Training in Dadu and Larkana.

These professionals were asked to implement the knowledge, attitudes, and inclusive teaching strategies learned in their individual school environments. Their involvement was correct because teachers and school managers have a major role in managing inclusive education, while other studies have shown that professional development helps teachers gain knowledge, skills, attitude, self-efficacy, and preparedness for working in inclusive environments.

Sampling Technique

The selection of participants for the current study employed a non-random purposive sample method. Participants were selected as they were part of the study population and were associated with the Inclusive Education Training program in Dadu and Larkana. This was justified since the focus of the study was on teachers and staff in schools who had a certain level of inclusion teaching training and some practical experience in the training and teaching practice. Therefore, research participants were expected to provide information on their practice, as well as their attitudes and conservative dispositions in their inclusive teaching practice.

Sample Size

A total of 467 participants responded to the survey. The sample comprised teachers and relevant staff from the selected education facilities in Dadu and Larkana, Sindh. The sample size was appropriate for the intended study due to the provision of sufficient observations for the conduct of descriptive and inferential statistics. This allows for an analysis of relationships, predictions, and group differences relating to teachers' knowledge, attitudes, and inclusive practices within the classroom. The sample was appropriate for analysis including the Pearson correlation, multiple regression, independent-samples t-test, and factorial ANOVA.

Data Collection

The data were collected using an adopted reactive structured questionnaire and entered via an online Google Form. The questionnaire was adapted from other studies related to inclusive education and included three factors: teachers' knowledge, teachers' attitudes, and inclusion practices. The factor of teachers' knowledge was based on teachers' understanding of the principles and approaches of inclusive education and the diversity of learners, as well as the inclusivity of teaching and learning techniques and methods for learners with special educational needs. The factor of teachers' attitudes was based on teachers' understanding of knowledge, acceptance, and inclination toward the inclusion of all learners in the regular/general classroom as reflected in the existing studies on teachers' attitudes and their willingness to participate in inclusion. The factor classroom practices was based on teachers' reporting of inclusive instructional practices and classroom management, and the adaptation of instruction, as well as participation and accommodating diverse learning needs. The items of the questionnaire were based on the Likert response format, and the wording was adapted to the Pakistani educational context and this study. The final version of the questionnaire was built in Google Forms and sent to the teachers and other personnel in schools who were a part of the Inclusive Education Training program in Dadu and Larkana. The participants were informed of the purpose of the study and were asked to fill out the questionnaire based on their work-related experiences and their perception of the inclusive education training that they received. Responses were automatically recorded through Google Forms and later downloaded and prepared for analysis.

Data Analysis

Responses were downloaded from Google Forms, and prepared for analysis in Excel. The data were analyzed for errors in completeness, inconsistencies, and coding. The final dataset was prepared for analysis in SPSS Statistics. Variable names, values, and measurement coding were added in SPSS before analysis. Summary statistics were prepared for demographic groups and study variables. The results were presented in terms of frequencies and percentages for grouped and nominal variables, while means and standard deviation were used for continuous and quantitative variables. Cronbach's alpha was used to compute internal consistency of the adopted measurements for assessing Inclusive Classroom Practices, level of teacher Knowledge, and attitudes.

The correlation between training provided for inclusive education and the level of teacher Knowledge, attitudes, and classroom practices was assessed using Pearson product-moment correlation. Inclusive education training was assessed for its potential to predict the most important outcome variables using multiple linear regression. Regression analysis was complemented by evaluating Cohen's effect size, standard error of the estimate, level of significance, R², and adjusted R². An independent-samples t-test was used to assess whether there was a significant difference between the mean for the male and female groups, or for knowledge, attitudes, and classroom practices. One-way ANOVA was used to assess if there was a significant difference in demographic groups due to difference in age, or teaching experience. Where a significant overall ANOVA result was obtained, Tukey HSD post hoc analysis was used to identify specific group differences.

Set at $\alpha = .05$, the statistical procedures were chosen based on the study goals and the nature of the variables.

Table 1: Demographic Characteristics of Respondents (N = 467)

Demographic Variable	Category	Frequency (f)	Percentage (%)
Gender	Male	252	54.0
	Female	215	46.0
Age	20-30 years	96	20.6
	31-40 years	177	37.9
	41-50 years	128	27.4
	51 years and above	66	14.1
Teaching Experience	Less than 5 years	73	15.6
	5-10 years	137	29.3
	11-15 years	145	31.0
	More than 15 years	112	24.0
Educational Qualification	Bachelor's degree	156	33.4
	Master's degree	239	51.2
	M.Phil./Equivalent	72	15.4
Designation	Primary School Teacher (PST)	304	65.1
	School Management/Head Teacher	163	34.9
District	Dadu	235	50.3
	Larkana	232	49.7
Total		467	100.0

The demographic information collected from the 467 respondents showed that roughly half of them were men and the other half women (54.0% and 46.0%, respectively). The 31-40 age group was the largest with 37.9% of the respondents. The next highest age groups were 41-50 (27.4%), 20-30 (20.6%), and 50+ (14.1%). Respondents with 11-15 years of teaching experience comprised 31.0%, the largest group of the respondents. The next highest groups consisted of respondents with 5-10 years (29.3%), with more than 15 years (24.0%), and less than 5 years (15.6%). According to their highest degree, respondents holding a Master's degree comprised 51.2% of the total. The next highest groups were Bachelor's degree (33.4%) and M.Phil. or equivalent (15.4%). The majority of the respondents identified as Primary School Teachers (65.1%), while 34.9% identified as School Management/Head Teachers. The respondents were nearly equally distributed between Dadu (50.3%) and Larkana (49.7%).

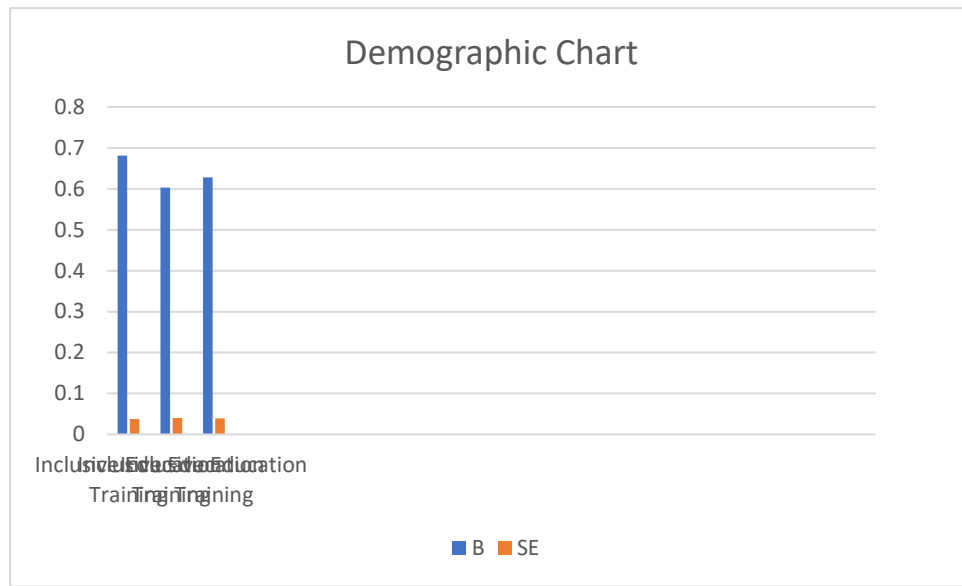


Fig.1 Demographic Characteristics of Respondents

Table 2: Pearson Correlation Between Inclusive Education Training and Teachers' Knowledge, Attitudes, and Classroom Practices (N = 467)

Variables	1	2	3	4
1. Inclusive Education Training	1	.642**	.587**	.614**
2. Teachers' Knowledge	.642**	1	.596**	.671**
3. Teachers' Attitudes	.587**	.596**	1	.648**
4. Classroom Practices	.614**	.671**	.648**	1

Note. $p < .01$ (2-tailed).

Pearson Correlation analysis showed significant positive relationships between Inclusive Education Training (IET) and teachers' knowledge ($r = .642$, $p < .01$), attitudes ($r = .587$, $p < .01$), and practice ($r = .614$, $p < .01$). Higher degrees of exposure to, and efficacy of, Inclusive Education Training, resulted in increased levels of teachers' knowledge, and more positive attitudes, and more effective implementation of inclusive classroom practices. Teachers' knowledge, attitudes and practices exhibited positive and significant relationships and the strongest association was with teachers' knowledge and practice ($r = .671$, $p < .01$). Based on the correlation analysis, the major study variables were positively and significantly related.

Table 3: Multiple Regression Analysis Predicting Teachers' Knowledge, Attitudes, and Inclusive Classroom Practices (N = 467)

Dependent Variable	Predictor	B	SE	β	t	p	R ²	Adjusted R ²
Teachers' Knowledge	Inclusive Education Training	0.681	0.038	.642	17.92	<.001	.412	.411
Teachers' Attitudes	Inclusive Education Training	0.603	0.040	.587	15.08	<.001	.345	.344
Classroom Practices	Inclusive Education Training	0.628	0.039	.614	16.10	<.001	.377	.376

Note. B = unstandardized regression coefficient; SE = standard error; β = standardized In the multiple regression analysis, Inclusive Education Training was shown to predict all three study outcomes and was a significant positive predictor of teachers' knowledge ($\beta = .642$, $p < .001$) and accounted for 41.2% of the variance and ($R^2 = .412$). Inclusive Education Training was also a

significant predictor of teachers' attitudes ($\beta = .587$, $p < .001$), and accounted for 34.5% of the variance ($R^2 = .345$). Likewise, Inclusive Education Training was a significant predictor of inclusive classroom practices ($\beta = .614$, $p < .001$) and accounted for 37.7% of the variance ($R^2 = .377$). According to the results of this study, Inclusive Education Training was a significant positive contributor to teachers' knowledge, attitudes, and practices. of the practice.

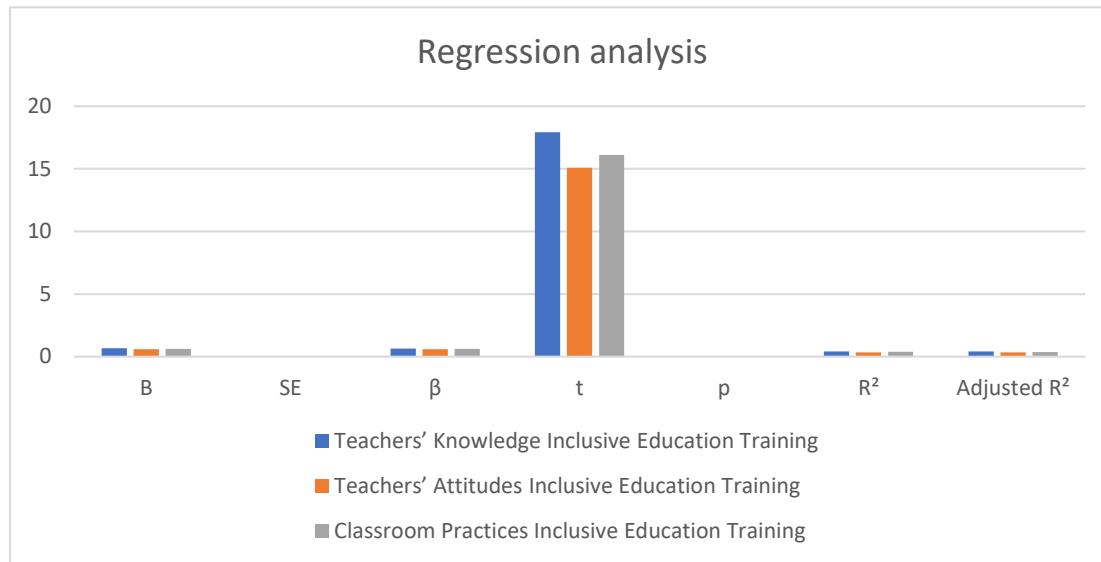


Fig.2 Multiple Regression Analysis Predicting Teachers' Knowledge, Attitudes, and Inclusive Classroom Practices

Table 4: Gender Differences in Teachers' Knowledge, Attitudes, and Inclusive Classroom Practices (N = 467)

Dependent Variable	Gender	n	M	SD	t	df	p
Teachers' Knowledge	Male	252	3.84	0.61	2.48	465	.013
	Female	215	3.71	0.62			
Teachers' Attitudes	Male	252	3.79	0.64	1.96	465	.051
	Female	215	3.68	0.65			
Classroom Practices	Male	252	3.76	0.63	2.17	465	.031
	Female	215	3.64	0.65			

Results of the independent-samples t-tests suggest that male and female teachers differ significantly in their knowledge of inclusive education. Male teachers reported a higher mean score ($M = 3.84$, $SD = 0.61$) than female teachers ($M = 3.71$, $SD = 0.62$), $t(465) = 2.48$, $p = .013$. Male teachers also reported a higher mean score for inclusive classroom practices ($M = 3.76$, $SD = 0.63$) compared with female teachers ($M = 3.64$, $SD = 0.65$), $t(465) = 2.17$, $p = .031$. However, the results of the t-tests for attitudes toward inclusive education were not statistically significant, and male teachers scored a mean of 3.79 ($SD = 0.64$), while female teachers scored 3.68 ($SD = 0.65$), $t(465) = 1.96$, $p = .051$. The results of the analysis suggest that male teachers have stronger knowledge and classroom practice of inclusive education than female teachers, but no significant difference was observed for attitudes toward inclusive education.

Dependent Variable	Source of Variation	SS	df	MS	F	p
Teachers' Knowledge	Between Groups	8.742	3	2.914	7.82	<.001
	Within Groups	172.623	463	0.373		
	Total	181.365	466			
Teachers' Attitudes	Between Groups	5.836	3	1.945	4.71	.003
	Within Groups	191.254	463	0.413		

Dependent Variable	Source of Variation	SS	df	MS	F	p
Classroom Practices	Total	197.090	466			
	Between Groups	7.921	3	2.640	6.39	<.001
	Within Groups	191.217	463	0.413		
	Total	199.138	466			

Note. SS = Sum of Squares; df = Degrees of Freedom; MS = Mean Square; F = F-statistic; $p < .05$.

The results of the one-way ANOVA showed that, with regard to levels of teaching experience, there were meaningful differences in the knowledge, attitudes, and inclusive teaching practices of teachers. Knowledge: $F(3, 463) = 7.82, p < .001$. Attitudes: $F(3, 463) = 4.71, p = .003$. Inclusive teaching practices: $F(3, 463) = 6.39, p < .001$. It can be concluded that, regarding all three dimensions of inclusive teaching, teaching experience was found to be a significant factor. Since the overall ANOVA results were found to be significant, a post hoc analysis of Tukey HSD was justified to determine which of the teaching-experience groups differed from the others.

Discussion

This study analyzed the inclusivity training program for teachers and school management staff in Dadu and Larkana to understand its impact on their knowledge, attitudes, and practices. The findings indicated that inclusivity training had positive impacts on practices and attitudes. Regression analysis suggested that training had a positive impact on all three components. The findings of the present study support Donath et al. (2023), who concluded that professional development had a positive impact on teaching staff's knowledge and attitudes towards inclusive education, with a greater impact on knowledge. (Sokal et al., 2013) added that teacher-related training could impact knowledge and attitude and transform the inclusivity of teaching. It is, therefore, reasonable to conclude that quality professional development programs could help educators become more effective in practicing inclusivity in their teaching.

The strongest relationships were observed between inclusivity training and teachers' knowledge, thereby suggesting that the inclusivity training program had a positive impact especially on teachers' understanding of the principles of inclusivity, variability of learners, and the inclusivity of teaching methods. The training also had a positive impact and a significant relationship on teachers' attitudes and practices. This suggests that, with training, teachers also developed a positive attitude toward inclusivity and teaching methods that were more in line with inclusion. These results corroborate the findings of (Jurkowski et al., 2023), who also supported training of teachers in terms of knowledge and attitude and inclusivity of teaching practice. The results of this study demonstrated that KAP components of inclusive education verified the integrated nature of the three aspects of the professionalism of teachers in terms of knowledge, attitudes, and practices vis-a-vis classroom inclusion, wherein knowledge provides the basis and attitudes address the willingness to include, while the other rests on practical inclusive competencies.

The results of this study demonstrated that all the three components of KAP differed in inclination based on the participants' gender (i.e., type) with a corresponding attitude inclination. These results also demonstrated that the three components of KAP differed in all the three teaching experience groups with a corresponding attitude inclination. Hence, in the context of the three listed groups, these results are generally in agreement with the findings of (Derakhshanpour et al., 2021), who emphasized that the career stage and practical experience and professional beliefs of teachers shape the outcome of the taught practice of inclusion. These results, however, should not be interpreted to mean that the participants' gender or the participants' teaching experience levels resulted in teaching effectiveness (Muzemil & Lola, 2019). This is because the teaching effectiveness (i.e., the outcome of the taught practice of inclusion) can be influenced by many factors (e.g., the teaching staff's training exposure, the resources of the school, the nature of the school's administration, the teaching staff's workload, the teaching staff's classroom conditions). Overall, the results of this study indicate that the PITE Inclusive Education Training provided the necessary preparation for the practice of inclusive education in Dadu and Larkana, and improvements in the practice of teaching included further training, practice, institutional support, and continued activities (Avramidis et al., 2019).

Conclusion

The Inclusive Education Training positively impacted the participants' knowledge, attitudes, and inclusive classroom practices in Dadu and Larkana. According to the research, participating teachers demonstrated better knowledge and understanding of teaching for inclusion, a more positive attitude towards learning diversity, and greater use of strategies for teaching inclusion in

their classrooms following the offered training. As shown by prior studies, professional development of teachers has the potential of influencing their understanding of and attitudes towards inclusive education, as well as of their teaching practices.

In addition, the study showed that knowledge, attitudes and practices of the teachers constitute an interrelated and integrated whole which characterizes inclusive education. Teaching experience as well as gender inclusive differences in knowledge and practices in teaching demonstrated that professional characteristics of teachers influence the outcomes of training. The overall results of the study advanced the view and suggested the need for more structured, practical and relevant Inclusive Education Training with supplementary needs and supports designed to assist the teachers in classroom implementation. Such comprehensive professional development together with supportive school conditions may contribute to effective and more consistent implementation of inclusive education across Dadu, Larkana and the broader Sindh area.

Future Implications

This study has positive implications for the advancement of inclusive education at government schools, especially in the province of Sindh, Pakistan. It demonstrates that the positive relationship between Inclusive Education Training and teachers' knowledge, attitudes and practices calls strongly for the inclusion of professional development in the policies and practices of inclusive education. Training should include the principles of refresher training and the development of practical classroom demonstrations, peer learning and mentoring, as well as the provision of follow-up support to help teachers sustain and apply competencies acquired during training.

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