

The Influence of Professional Development Training and Classroom Size on the Effectiveness of Teaching Practices in Inclusive Education

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ABSTRACT

The effectiveness of teaching practices is a critical factor in the success of inclusive education, as it directly impacts how well diverse learners are supported in the classroom. This study investigated the influence of professional development training and classroom size on teaching effectiveness in inclusive education settings. Using a quantitative correlational research design, the study involved 180 teachers from the Caraga North District in the Division of Davao Oriental, Philippines, all with at least one year of experience in inclusive education and selected through total enumeration sampling. Data were collected using a structured, expert-validated, and pilot-tested survey instrument. Descriptive statistics were used to summarize the data, Pearson correlation assessed the relationships among variables, and multiple regression analysis examined the individual and combined effects of professional development and classroom size. Results revealed a strong positive relationship between professional development training and teaching effectiveness, while classroom size showed a moderate yet significant impact, with larger class sizes negatively affecting teaching outcomes. These findings highlight the importance of ongoing teacher training and class size management in promoting effective instructional practices in inclusive classrooms. The study provides valuable insights for educators, school leaders, and policymakers in developing strategies that enhance the quality of inclusive education.

Keywords: Inclusive education, professional development training, classroom size, teaching effectiveness

INTRODUCTION

The effectiveness of teaching practices continues to face significant challenges in the modern educational landscape. Educators often encounter difficulties in adapting to rapidly changing instructional environments (Henriksen et al., 2020). Teachers often utilize a wide range of effective teaching practices, which may not always align with pedagogical frameworks. This variation can create disparities in the quality of education that learners receive, with some benefiting from more effective teaching while others may not (Bibon, 2022).

Globally, the effectiveness of teaching strategies in inclusive education remains a pressing concern, as many countries face challenges in implementing inclusive education practices that meet the diverse needs of learners. In South Africa, Engelbrecht (2020) found that many teachers still feel ill-equipped to adapt teaching practices for diverse learners. In India, (Gale et al. 2021) reported that general education teachers face persistent challenges in implementing inclusive teaching practices. These global patterns reveal a widespread issue: even with supportive policies, the actual teaching practices in inclusive settings often fall short of being effective.

In the Philippines, the effective teaching practices in inclusive settings remain inconsistent and underdeveloped. A study by Paguirigan, E. (2020) noted that teaching practices often lack differentiation and fail to address the varied needs of learners with disabilities. In Davao Oriental, the effectiveness of teaching practices continues to be a pressing issue within the educational system. There remain significant challenges in ensuring that teaching practices consistently meet the diverse needs of learners. This ongoing concern calls for a thorough evaluation of current practices and an enhanced focus on refining teaching strategies to foster better learning outcomes across the region (Bugwak, 2022).

Despite global initiatives aimed at promoting effective teaching practices inclusive education, significant barriers still exist, such as inadequate teacher training, limited resources, and insufficient support systems, which hinder the full participation of all learners in the learning process (García-Barrera, 2022). These challenges prevent the creation of truly inclusive classrooms where the diverse learning needs of learners are addressed effectively. As a result, learners' educational experiences are not fully optimized, contributing to ongoing inequalities in learning outcomes. These gaps in implementation limit the potential for an inclusive and equitable education system (Hollings, 2021).

This study holds global significance as it addresses the urgent need to improve the effectiveness of teaching practices in inclusive education. It directly supports the United Nations' Sustainable Development Goal 4 (SDG 4): Quality Education, which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. This study aims to explore the level, relationship, and impact of professional development training and classroom size on the effectiveness of teaching practices in inclusive education. Specifically, it investigates how these two factors contribute to and influence teaching effectiveness in inclusive classroom settings.

This study is anchored in Bandura's Social Cognitive Theory, which posits that personal factors, behavior, and environmental influences interact to shape human functioning. In this study, teachers' personal factors such as knowledge, beliefs, and attitudes shaped by professional development training interact with teaching behaviors and practices used in inclusive classrooms. Additionally, the environment, including classroom size and the diversity of learners, significantly influences how teachers implement inclusive teaching practices. Bandura's Social Cognitive Theory supports the idea that improving teaching effectiveness involves both enhancing teacher competence and addressing environmental conditions. This interplay helps explain how teaching practices develop to support diverse learners effectively (Bandura, 1986).

Conceptual Framework

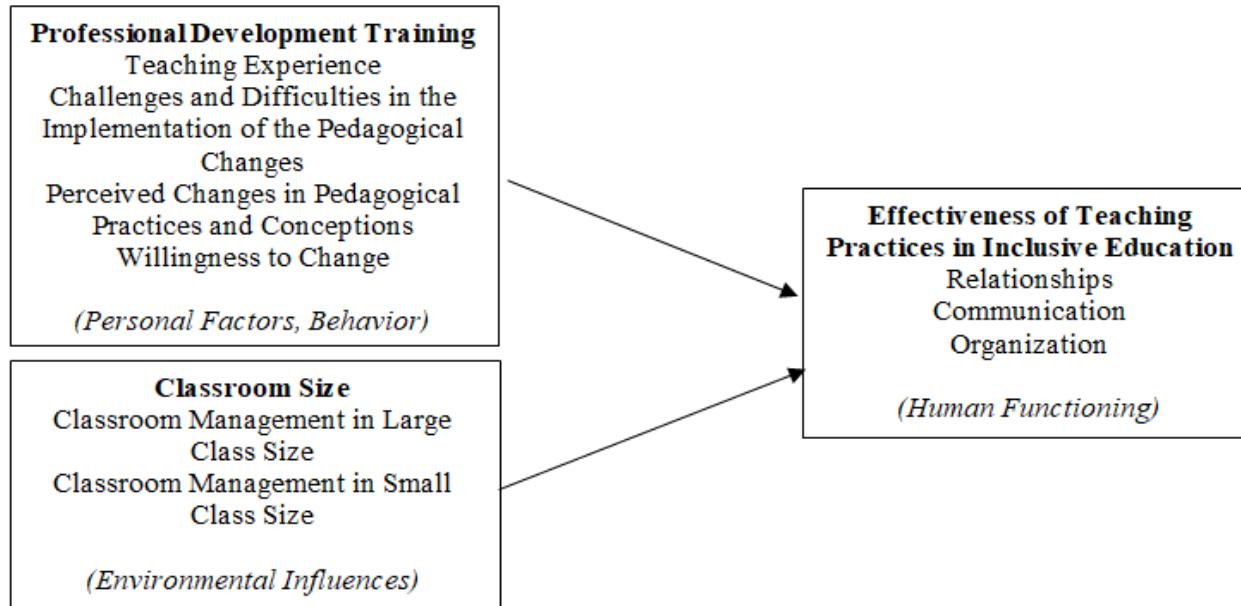


Figure 1: Conceptual Framework of the Study

METHODOLOGY

This study utilized a quantitative correlational research design to investigate the relationship and influence of professional development training and classroom size on the effectiveness of teaching practices in inclusive education. This design enabled the collection and analysis of numerical data to explore associations between variables without manipulation (Creswell, 2017). Teacher surveys served as the primary data source, and analyses included Pearson's correlation and multiple regression to assess the extent of the independent variables' impact on teaching effectiveness (Field, 2020).

The study was conducted in public schools within the Caraga North District of Davao Oriental, selected for its active inclusive education efforts, diverse learner population, and ongoing teacher training programs. This real-world setting provided an ideal context for examining the studied variables. Using a total enumeration sampling technique, the study involved 180 teachers assigned to inclusive classrooms, each with at least one year of experience.

The instrument used was pilot-tested, yielding a Cronbach's alpha of 0.779, indicating acceptable internal consistency. Collected data were organized, encoded, and analyzed using appropriate statistical tools. Descriptive statistics such as mean and standard deviation were used to summarize the data, while inferential methods, including Pearson's correlation and multiple regression, explored the relationships and the individual and combined effects of the independent variables on teaching effectiveness. Analysis was performed using JAMOVI software, with results presented in tables and interpreted according to the study's objectives.

The study adhered to ethical guidelines, ensuring participants' rights, dignity, and well-being. Informed consent was obtained, clearly explaining the study's purpose, procedures, and any risks. Participation was voluntary, with the right to withdraw at any time. Confidentiality was maintained through secure data handling and anonymity. Care was taken to avoid psychological discomfort, with all questions suited to the inclusive education context. Teachers' comfort and safety were prioritized, and any concerns were addressed respectfully.

RESULTS

Table 1. Descriptive Table

Variables	SD	Mean	Description
Professional Development Training	0.528	3.49	Very High
Teaching Experience	0.462	3.69	Very High
Challenges And Difficulties in the Implementation of the Pedagogical Changes	0.672	3.20	High
Perceived Changes in Pedagogical Practices and Conceptions	0.517	3.37	Very High
Willingness to Change	0.464	3.69	Very High
Classroom Size in Inclusive Education	0.546	3.28	Very High
Classroom Management in Large Class Size	0.610	2.91	High
Classroom Management in Small Class Size	0.482	3.64	Very High
Effectiveness of Teaching Practices in Inclusive Education	0.451	3.39	Very High
Relationships	0.493	3.59	Very High
Communication	0.363	3.16	High
Organization	0.497	3.43	Very High

Presented in Table 1 is the descriptive statistics of professional development training, classroom size, and effectiveness of teaching practices in inclusive education. The overall mean for professional development training is 3.49, rated as very high, indicating that educators find their training experiences highly beneficial and impactful. The standard deviation of 0.528 shows moderate variability, indicating that participants generally shared consistent views regarding professional development programs. Among the indicators, teaching experience and willingness to change both received the highest mean of 3.69, interpreted as very high, reflecting that educators feel professionally enriched and are open to adapting new teaching methods which an essential trait in inclusive, learner-centered education. Their standard deviations of 0.462 and 0.464, indicates a low variability that shows strong agreement among participants. On the other hand, challenges in implementing pedagogical changes had the lowest mean of 3.20, though still rated high. This suggests that while teachers face difficulties applying new methods, they are actively trying to adapt. The standard deviation of 0.672, the highest among the indicators, points to greater variation in how these challenges are experienced.

The overall mean of 3.28 for classroom size in inclusive education is rated very high, indicating strong classroom management abilities across varying class sizes. The standard deviation of 0.546 reflects moderate variation in perceptions about classroom size. Among the two indicators, classroom management in small class

size recorded the highest mean of 3.64, rated as very high, indicating that teachers find smaller classes easier to manage allowing for more focused instruction, individualized support, and better control over classroom behavior. The low standard deviation of 0.482 suggests a shared experience among teachers in these environments. In contrast, classroom management in large class size had the lowest mean of 2.91, though still categorized as high. This implies that while teachers manage large classes to some extent, they face ongoing challenges like maintaining learner attention, meeting diverse needs, and encouraging participation. The higher standard deviation of 0.610 points to greater variability in responses, likely influenced by factors such as class size, available resources, or the specific needs of learners with disabilities.

The effectiveness of teaching practices received an overall mean score of 3.39, rated as very high, indicating strong approval of current teaching strategies and the organizational environment. However, there is still some room for improvement, particularly in communication. The standard deviation of 0.451 suggests relatively low variability, indicating that participants' perceptions of teaching effectiveness were fairly consistent. Among the three indicators, relationships had the highest mean score of 3.59, rated as very high, suggesting that teachers are highly effective in building positive, supportive, and respectful relationships with learners that are essential for a productive learning environment. The standard deviation of 0.493 suggests a slightly broader range of responses, though still within a relatively consistent pattern. In contrast, communication received the lowest mean score of 3.16, though still rated as high. This implies that while communication is generally effective, there may be areas needing improvement, such as providing clearer instructions or more constructive feedback. The standard deviation of 0.497, the highest among the three indicators, reflects the most variability in responses, suggesting that experiences with communication effectiveness vary more notably between participants and classrooms.

Table 2. Test of Relationship

Effectiveness of Teaching Practices				
	R-value	p-value	Decision on Ho	Interpretation
Professional Development Training	0.68	<.001	Reject	Significant
Classroom Size in Inclusive Education	0.50	<.001	Reject	Significant

Presented in Table 2 is the relationship between professional development training, classroom size, and the effectiveness of teaching practices in inclusive education. Professional development training shows an R-value of 0.68, indicating a strong positive correlation with the effectiveness of teaching practices. The associated p-value is < .001, which is well below the standard significance level, suggesting that the relationship is statistically significant. Therefore, the null hypothesis is rejected, confirming that professional development training significantly influences teaching effectiveness. Similarly, classroom size has an R-value of 0.50, representing a moderate positive correlation with teaching effectiveness. With a p-value < .001, this relationship is statistically significant as well. As a result, the null hypothesis is again rejected, indicating that classroom size also plays a meaningful role in the effectiveness of teaching practices in inclusive settings.

Table 3: Test of Influence

Effectiveness of Teaching Practices in Inclusive Education					
	R ² -value	F-value	p-value	Decision on Ho	Interpretation
Professional Development Training	46.3%	15.3	<.001	Reject	Significant
Classroom Size	25%	59.3	<.001	Reject	Significant
Combined Influence	50.5%	90.3	<.001	Reject	Significant

Table 3 shows the results that examined how professional development training and classroom size significantly influences the effectiveness of teaching practices in inclusive education. The regression analysis shows that professional development training explains 46.3% of the variance in the effectiveness of teaching practices indicating that nearly half of the differences in teaching quality can be attributed to the level and quality of training teachers receive, with an F-value of 15.3 and a p-value <.001, indicating a statistically significant impact leading to the rejection of the null hypothesis and confirming that professional development is a strong predictor of effective teaching. Classroom size independently explains 25% of the variation in

teaching effectiveness, with an F-value of 59.3 and p-value $<.001$, showing that class size is also a meaningful factor influencing teaching outcomes. Together, these factors explain 50.5% of the variance in teaching effectiveness with a combined F-value of 90.3 and a p-value $<.001$, demonstrating a strong and significant joint influence. These findings imply that both continuous professional development and optimizing classroom size are critical to improving teaching effectiveness in inclusive education.

DISCUSSION

The findings of this study demonstrated that both professional development training and classroom size significantly influence the effectiveness of teaching practices in inclusive education. Participants rated professional development very highly which means that professional development training has a strong positive impact. This aligns with recent research highlighting the critical impact of sustained, high-quality professional development on teacher effectiveness and learner outcomes (Alzahrani, 2023). Classroom size was also viewed as very high which implicates that teacher always demonstrated optimal classroom management conditions in particular class size. Research shows that smaller class sizes support more tailored teaching approaches, which are essential in inclusive settings (Graham et al., 2020). Additionally, effectiveness of teaching practices was rated very high indicating that teachers consistently demonstrate teaching practices. Recent evidence of Luo & Li (2024) emphasizes that fostering professional competence and collaborative practices among educators enhances inclusive teaching outcomes.

The correlational analysis confirms a strong, positive, and statistically significant relationships between professional development training, classroom size, and the effectiveness of teaching practices in inclusive education. Teachers who receive ongoing, relevant training are better equipped with the skills and confidence needed to implement inclusive, learner-centered strategies, which positively impacts their teaching practices. Likewise, manageable classroom sizes enable teachers to provide more individualized attention, maintain better classroom control, and effectively address diverse learner needs. These findings suggest that supporting teachers through continuous professional development and creating optimal classroom conditions significantly improves the quality of instruction in inclusive settings (Badmus, 2023).

The regression analysis offers strong support that both professional development training and classroom size play significant roles in shaping the effectiveness of teaching practices in inclusive education. This aligns with existing research highlighting how ongoing professional development equips teachers with essential skills, knowledge, and strategies needed to address the diverse needs of learners and improve instructional quality (Guskey, 2002). Additionally, the impact of classroom size echoes findings that smaller classes facilitate more individualized attention, better behavior management, and stronger teacher-learner interactions, all of which contribute to more effective teaching and learning environments (Finn, Pannozzo, & Achilles, 2003). Together, these results underscore the critical need to invest in continuous teacher training and maintain manageable class sizes to foster inclusive and high-quality education.

This study affirms that both professional development and classroom size significantly influence teaching effectiveness in inclusive settings. The results are consistent with existing literature and theoretical models, particularly Bandura's Social Cognitive Theory. These findings highlight the importance of supporting teachers through continuous professional training and structural reforms aimed at reducing class sizes, thereby promoting inclusive and effective teaching practices.

Based on the findings of this study, it is recommended that schools and educational leaders provide ongoing, high-quality professional development programs focused on inclusive education. Such training equips teachers with the necessary skills to manage diverse classrooms and implement strategies that support all types of learners. Additionally, maintaining manageable class sizes is essential, as it enables teachers to give individual attention and foster active learner participation. Together, professional development and classroom size account for 50.5% of the variance in teaching effectiveness. However, the remaining 49.5% suggests that other factors which may include school leadership, teacher motivation, availability of resources, and learner characteristics also play important roles. Supporting teachers through training and classroom conditions not only improves teaching effectiveness but also contributes to achieving Sustainable Development Goal 4, which aims to ensure inclusive and equitable quality education for all.

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