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Teachers' Level of Understanding of Inclusive Education on Their Efficacy in the Inclusive Early Childhood Education Delivery

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Abstract

The self-efficacy of teachers plays a pivotal role in the context of inclusive classrooms, which cater to learners with diverse abilities and learning styles. Studies have underscored the significance of teacher self-efficacy in the success of inclusive early childhood education. However, limited attention has been given to examining the level of understanding and self-efficacy among teachers in inclusive early childhood schools in Zambia. Consequently, this study was undertaken to investigate the inclusive teaching efficacy of teachers in early childhood schools in Zambia and explore how their understanding in this area impacts their self-efficacy. This study utilized a causal comparative design and included a sample of 133 inclusive early childhood class teachers from selected schools in Lusaka, Eastern and Copperbelt provinces of Zambia. The statistical analysis, specifically the *t*-test, was employed to demonstrate the positive effect of teachers' understanding of inclusive education in early childhood on their self-efficacy levels. Additionally, the findings indicated a strong correlation between teachers' experience in teaching inclusive early childhood learners and their motivation, which in turn relates to both self-efficacy and knowledge in this domain of practice. Consequently, it is imperative to offer inclusive continuous professional development opportunities to enhance teachers' self-efficacy in inclusive early childhood education. Equipping teachers with the requisite knowledge and skills through such initiatives is crucial for effectively addressing the diverse needs and ensuring the success of learners in inclusive classrooms.

Keywords: *Early childhood, Inclusive education, Self-efficacy, Inclusive teaching-efficacy, Teachers' understanding*

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1. Introduction

Inclusive education has gained significant attention on a global scale. Numerous authors have asserted the significance of teachers' attitudes toward inclusive education and their views in their own self-efficacy in the context of inclusive education (Schwab, 2018). The European Union has been treating inclusive education as a common policy goal, moving away from the inclusion of students with special educational needs towards the inclusion, participation, and development of all learners (Schwab, 2020). Inclusive education has gained significant attention on a global scale. Numerous authors have asserted the significance of teachers' attitudes toward inclusive education and their views in their own self-

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efficacy in the context of inclusive education (Schwab, 2018; Avramidis and Norwich, 2002; De Boer *et al.*, 2011; Forlin, 2013; Tschannen-Moran and Hoy, 2001).

In keeping with its push for the education for all objective, the Zambian government, working through the Ministry of Education, is also supporting early childhood initiatives, including teacher training for this subsector (MOESVTEE, 2012, MoE, 2005, MoE, 2007). The self-efficacy of teachers is one concept that has a strong relationship to the instructional strategies used in inclusive classrooms. Research indicates that educators who possess a strong sense of their own teaching efficacy are more likely to establish classroom settings that cater to students with different skills and learning preferences (Sharma *et al.*, 2012.; Guo *et al.*, 2014). According to Bandura's (1997) theory, having confidence in one's skills is a strong motivator that affects one's willingness to take action. Mittler (2000) asserted that inclusive teaching efficacy is essential to the successful delivery of early childhood inclusive education, stating that a teacher with low teaching self-efficacy is likely to put forth less effort in planning and delivering lessons in the classroom and to give up more easily when children struggle. The majority of research on self-efficacy and education in Zambia has focused on university students' overall self-efficacy and adaptability (Mwanza, 2015, Wilson, 1994). There is a lack of data on inclusive teaching efficacy in early childhood education because previous studies (Suldo *et al.*, 2009, Lai, 2014) have concentrated on the connection between learners' academic achievement and self-efficacy.

The problem became apparent when it was realized that inclusive teaching efficacy among teachers handling learners in inclusive early childhood schools in Zambia, especially with regards identifying self-beliefs held by teachers in handling learners in an inclusive early childhood classroom has not been fully explored. With the available evidence that teachers' self-efcacy is a powerful construct of teacher quality over time (Montgomery and Mirenda, 2014; Sharma and George, 2016), it is hard to continue pushing for quality inclusive early childhood education without investigating inclusive teaching efficacy at this foundational level of education (Munsaka and Matafwali, 2013). The serious implication of not attending to this study's concern may lead to continued poor academic performance and failed implementation of effective inclusive education in early childhood schools. Hence, the study was conducted to investigate the effects of teachers' level knowledge of inclusive education on their efficacy in the Inclusive Early Childhood Education delivery among teachers handling learners in early childhood schools in Zambia for the purposes of promoting quality early childhood inclusive education being a critical foundation to other levels of education provision.

Inclusive early childhood education is a vital aspect of fostering an inclusive society. It refers to the practice of providing equal opportunities for all children, regardless of their abilities or backgrounds, to participate in early childhood education programs. The goal is to create an environment where every child feels valued, supported, and included. Inclusive early childhood education recognizes and celebrates diversity, promoting positive social interactions and learning experiences for all children. By understanding the principles and benefits of inclusive education, teachers can play a crucial role in unlocking the potential of every child and ensuring their success in the early years of their education journey.

1.1. Concept of Self-efficacy in Education

Albert Bandura grounds the concept of self-efcacy in the social cognitive theory. Bandura (1997) conceptualized it as an individual's judgment of their capabilities to attain a desired level of performance. He published his influential work, "Self-efficacy: Toward a unifying theory of behavioral change", in 1977 which provoked remarkably, the growth of research on self-efficacy (Hofman and Kilimo, 2014). In this regard, research supports the claim that self-efficacy has an important influence on human achievement in a variety of settings, including educational achievement (Woodcock *et al.*, 2012). Many well-crafted studies have been carried out in the area of teacher self-efficacy and researchers are interested in practical application of their work where the evidence from research indicates that teachers do not feel equally efficacious for all teaching situations (Wang *et al.*, 2012; Hofman and Kilimo, 2014). Hence, one may feel efficacious to teach a particular group of students and she/he may feel more or less efficacious under different circumstances such as teaching the disabled instead of the average group of learners.

Thus, Wang *et al.* (2012) insisted that while judging teachers' self-efficacy, it is necessary to consider the teaching task, context as well as personal competence. Therefore, teaching in an inclusive classroom may be an issue of concern to the teacher and stakeholders as a whole. For example, teachers may handle learners with special education needs in an inclusive classroom with mixed feelings. This means that as teachers implement inclusive teaching, they must be able to respond, at least tentatively in the affirmative to the questions they have about inclusion. However, the most important factor that influences teachers' beliefs about inclusion is their direct experiences with inclusion (Leyser, *et al.*, 2011).

What is even more intriguing is the teaching of an inclusive class of early childhood learners who are in a critical stage of development and indeed require a special commitment by the teachers. This is because ordinarily, a preschool learner requires an extra attention because they are still in a rapid development, mentally and physically. As Bandura (1997) argues, low efficacious individuals are not likely to succeed in their tasks. It is revealed in a study by Hofman and Kilimo (2014) that although most teachers support the concept of inclusion at all levels including early childhood education, they are barely willing to teach in inclusive classrooms. Teachers are key stakeholders in the provision of inclusive education and this regard, their self-efficacy about their ability to handle an inclusive class of learners is significant (Leyser *et al.*, 2011).

Furthermore, Hofman and Kilimo (2014) argued that early childhood special education teachers' who perceived themselves less capable were more motivated to improve their skills and knowledge compared to teachers with a high level of self-efficacy, in addition to some limitations that pertained to the measurement of teacher self-efficacy in this study. The lack of a strong relationship between teacher beliefs and observed teacher-child interaction quality in study under review contradicted with research that had indicated that early childhood teachers' practices were influenced by their beliefs about teaching and also by their efficacy beliefs (Montgomery and Mirenda, 2014).

While self-efficacy has been extensively studied, many scholars have focused on self-efficacy and adaptation of the learners in a learning environment (Mwanza, 2015; Wilson, 1994) while others concentrated self-efficacy and its effect on learner performance (Sharma *et al.*, 2012.; Guo *et al.*, 2014). On the other hand, there is also compelling evidence that early childhood teachers do not always practice what they believe to be important and are not better teachers in reality because they report a high level of low self-efficacy (Engstrand and Roll-Pettersson, 2014; Guo *et al.*, 2014). With this background, the current study was necessitated when it was realized that inclusive teaching efficacy among teachers handling learners in early childhood inclusive schools in Zambia remained not fully explored.

1.2. Inclusive Teaching Efficacy

Singogo and Muzata (2023) explain Inclusive teaching efficacy as teacher's beliefs in their competence in the context of inclusive education in early childhood schools. Indeed, among the factors shown to affect teacher effectiveness in inclusive classrooms is inclusive teaching efficacy. It has been argued by many researchers that self-efficacy is a context construct and that there are variations across participants and different student groups (Tschannen-Moran and Hoy, 2001; Ross *et al.*, 1996; Raudenbuch *et al.*, 1992). This simply means that a teacher that is efficacious to teacher a particular discipline or level of education may not be equally efficacious in teaching other subjects or level of education.

Similarly, an important undertaking about the predictors of teachers' inclusive Teaching Efficacy to teach in inclusive classrooms would be necessary. A study by Sokal and Sharma (2013) in Canada on 131 teachers (pre-school to grade 8) meant to determine factors that contribute in shaping participants' teacher efficacy scores used a simple linear regression. It was found that only confidence in teaching students with disabilities ($\beta = 4.23, p < 0.001$) significantly explained participants' teacher efficacy score. The outcome of this study suggests that as a participant's level of confidence in teaching students with disabilities improves, overall teaching efficacy to teach in inclusive classrooms improves (Sokal and Sharma, 2013). This Canadian study brought out interesting results but its whole weight was on quantitative technique and focused on a range of teachers up to grade 8.

Studies from within Zambia have demonstrated that exposure to quality early childhood experiences can facilitate for a smooth transition from Pre-school to Primary school and can also meet the developmental and academic learning needs of the children (Matafwali and Munsaka, 2011; Zuilkowski *et al.*, 2012; Matafwali and Serpell, 2014; Matafwali and Kabali, 2017). Additionally, a study by Lungu and Matafwali (2020) explored the nature of play-based teaching and learning at Early Childhood Education (ECE) Centres in Zambia from the perspective of teachers using a qualitative approach. Results of the aforementioned study revealed that children were engaged in both conventional and indigenous play activities mainly through free play and teachers demonstrated a positive perspective of play-based learning, asserting that play based pedagogy benefits children holistically. While, Lungu and Matafwali (2020) focused on nature of play-based teaching in ECE with qualitative approach, their study did not focus on inclusive teaching efficacy of the teachers.

It has been elucidated that teachers' beliefs are pertinent to their ability to bring about desired change in children's achievement. Similarly, Inclusive teaching-efficacy in the context of inclusive education for learners with special needs calls for special attention. For example, Majoko (2018) conducted a study on Inclusion in Mainstream Early Childhood Development. This study examined teachers' concerns about inclusion in mainstream Early Childhood Development (ECD) in Mashonaland West educational province of Zimbabwe. Embedded within the "core expertise" of inclusive pedagogy, the study draws on a sample of 21 mainstream ECD teachers purposively selected from the educational

province. The findings reveal that participants had systemic concerns about inclusion in mainstream ECD including the lack of physical facilities, time, clear and specific policy, finance, support services and flexible curricula. Participants also had teaching related concerns about inclusion including stakeholders' negative attitudes, large class sizes, inadequate professional preparation and the nature and severity of disabilities leading to low self-motivational to handle mainstream classrooms. Indeed, the low self-motivation in handling the mainstream class of learners revealed by the Zimbabwean study is a big lesson for the Zambian context in pushing for a motivated and productive early childhood teacher for quality early childhood education.

1.3. Teachers' Knowledge and Their Self-efficacy in Inclusive ECE

Teachers' beliefs in their ability play a critical role to succeed in executing their duties with effectiveness. A study by Guo *et al.* (2013) revealed that teachers' self-efficacy is highly related to the second-fourth grade reading skills, explaining 70% of the between school variances in student outcome. The aforementioned study was significant in that it unveiled that teachers' self-efcacy was strongly related to second-fourth grade students' reading skills and that teachers' perception of self-efcacy signicantly predicted students' language skills. It is interesting to note that the said study focused much on the influence of teachers perceived self-efcacy on the performance of learners in inclusive classrooms paying specific attention to the reading ability in the fourth grade (Guo *et al.*, 2013).

Another study examined pre-school teachers in classrooms serving preschool children exhibiting social and/or economic risks in the US, using an abbreviated 7-item version of the Teacher Self-Efcacy Scale (TSES) (Bandura, 1997). This study found that preschool teachers reported having generally high self-efcacy. Further, Leyser *et al.* (2011) assessed preschool teacher self-efcacy and found that 48 preschool teachers in the US who taught children at-risk for academic difculty reported having similarly high levels of self-efcacy. Equally, in another investigation of 64 general education preschool teachers, Montgomery and Mirenda (2014) found that these teachers demonstrated high and positive efcacy about their capabilities to teach children. Taken together, such ndings indicate that general education preschool teachers seem to be optimistic about their abilities to teach young children in the classrooms such as motivating and engaging children, control disruptive behaviors, use effective instructional strategies (Woodcock *et al.*, 2012). The results in the aforementioned studies are very vital in that they provide an insight to what is obtaining in American set up though none of the studies focused on the role of general self-efcacy of teachers in an inclusive classroom.

The self-referent thinking of an individual mediates between her/his knowledge and behaviors, according to Bandura's social cognitive theory. Self-reflection is a common method used by most people to assess their own experiences and cognitive processes. According to Bandura, individuals are proactive, self-organizing, self-reflective, and self-regulating entities as opposed to reactive organisms (Ahmed *et al.*, 2014). According to this viewpoint, human functioning can be explained as the outcome of a dynamic interaction between a person's personality, behavior, and environment. In other words, people's self-beliefs and environments will be influenced and changed by how they perceive the outcomes of their own behavior, which will in turn change their subsequent behaviors. This is the cornerstone of Bandura's (1997) idea of reciprocal determinism, which holds that interactions between behavior, personal variables, and environmental factors produce outcomes.

Bandura's social cognitive model considers self-reflection as a unique human capability, through which an individual evaluates and alters his behavior, including the perceptions of self-efcacy. In this regard, it is important to state the teacher handling an early childhood class can also be informed by his personal beliefs which may result in alteration of their behavior (Singogo and Muzata, 2023). Additionally, Klassen and Chiu (2010) suggested that some people have a strong sense of self-efcacy, and others do not; some have self-efcacy that covers many situations, whereas others have narrow self-efcacy; and some believe they have high self-efcacy to do the most difficult tasks, while others do not. Bandura's key contention regarding the role of self-efcacy in human functioning is that an individual's motivation to do a particular task and actions may not be based on what he or she really is, but on what he or she believes he or she can do. This motivates the current study to investigate inclusive general teaching efficacy among teachers in inclusive early childhood schools in Zambia.

It is argued by Hofman and Kilimo (2014) that teachers' qualification and attitude impede effective implementation of early childhood inclusive education. Further, positive attitudes are indispensable for success, particularly when learners with Special Educational Needs (SEN) are placed into regular classrooms.

Several studies on self-efcacy have concentrated on enhanced achievement in reading skills in relation to the perceived teacher efficacy across grade levels (Ashton and Webb, 1986, Goddard *et al.*, 2000; Guo *et al.*, 2012). For

instance, a study in the Netherland on 775 teachers drawn from 53 elementary schools revealed that language skills were significantly predicted by the perceived teacher efficacy (Moolenaar *et al.*, 2012). It is important to note that language acquisition skills at early childhood level play a critical role in other grade level and hence the significance of the said Netherland study. This in turn may directly influence positively to the low reading rate difficult in the primary grade among children with language impairments but exploring inclusive general teaching efficacy will be an eye opener overallly other than language impairment.

Similarly, a study by Schwab and Alnahdi (2020) to investigate factors inuencing teachers' use of inclusive teaching practices was conducted in Austria. A sample of 221 Austrian in-service teachers participated who lled out the attitudes towards inclusion scale (AIS), the Teacher Efcacy for Inclusive Practices Scale (TEIP) and the teacher version of the Inclusive Teaching Practices Scale (ITPS-T). The study results revealed that teachers had high self-perceptions towards their use of inclusive teaching practices; compared with secondary school, primary school teachers reported using more inclusive teaching practices. Additionally, it was further shown that there was no difference between expert and novice teachers; teachers' attitudes and self-efcacy were associated with inclusive teaching practices; and self-efcacy predicted teachers' use of inclusive teaching practices (Schwab and Alnahdi, 2020). The study covered a number of important sectors in inclusive education and self-efcacy although the sample was purely Austrian in-service teachers involving secondary and primary school teachers.

2. Methodology

The present study utilized a descriptive design, which constitutes a method of gathering information through interviewing or administering questionnaires to a selected group of individuals (Creswel, 2012). The rationale behind choosing this design was to allow the researcher to derive measures based on data collected from early childhood teachers, as well as to acquire insights into their perspectives on the topic at hand (Creswel, 2012).

The study primarily focused on in-service teachers employed in inclusive early childhood schools situated in the provinces of Lusaka, Copperbelt, and Eastern, encompassing a population estimate of 2200 individuals according to information obtained from the office of the Provincial Education Officers (PEOs). From this population, a purposive sample of 133 teachers was selected to participate in the study, guided by information provided by the provincial education office. Data collection for this study was conducted through a structured questionnaire, chosen for its ability to systematically gather data from a substantial sample in a precise and reliable manner (Kasonde-Ng'andu, 2013). Data analysis involved the utilization of the IBM Statistical Package for Social Sciences (SPSS) to compute various statistical tests, such as the Related-Samples Wilcoxon Signed Rank Test, Independent-Samples Kruskal-Wallis Test, correlation coefficient, Independent-Samples Mann-Whitney U Test, and One-Way Analysis of Variance (ANOVA).

3. Results

The data necessary to support this study was obtained by administering a questionnaire to a sample of 133 in-service teachers in inclusive early childhood schools located in Lusaka, Copperbelt, and Eastern provinces of Zambia. The purpose of collecting these findings was to validate the impact of teachers' understanding of inclusive education on their self-efcacy in delivering inclusive early childhood education.

3.1. Teachers' Self-efcacy in the Inclusive Early Childhood Education

The teacher's degree of self-efcacy was assessed as the first task for this study, and the results are ($N = 133$, $M = 31.67$, $SD = 6.65$) and levels provided in Table 1. The instructors' levels of self-efcacy in instructing inclusive Early childhood classes were calculated using a total of 52 points, with 70% and above set to High, 40% set for the lower boundary of the average score, and 70% and above set to Medium. The results showed that 44 (44.1%) respondents had low levels of self-efcacy, meaning they had sufficient assurance in their abilities to teach an inclusive early childhood classroom, whereas 3 respondents (2.3%) had high levels of self-efcacy, 86 (64.7%) had an average level, and 3 respondents (2.3%) had high levels.

These observations were also subjected to the statistical test in order to find out whether they reflected the actual picture of the outcome of the test. The Chi-Square test was used resulted in $\chi^2(2, N = 133) = 77.699, p < 0.050$, to prove a significant association between the expected and observed results pertaining to the teachers' levels of self-efcacy in that regard.

Table 1: Teachers’ Levels of Self-Efficacy

		Sex of Respondents		
		Male	Female	Total
Teachers’ Level of Self-Efficacy	Average	11	75	86
	High	0	3	3
	Low	7	37	44
Total		18	115	133

In order to determine whether these observations accurately depicted the test’s conclusion, they were also put through a statistical analysis. The Chi-Square test was employed, and the results showed, to prove a significant association between the expected and observed results pertaining to the teachers’ levels of self-efficacy in that regard.

3.2. Effect of Teachers’ Understanding/ Knowledge of Inclusive Education on their Efficacy in the Inclusive Early Childhood Education Delivery

The teachers’ grasp or knowledge of inclusive education in Zambia was validated before it was tested against their self-efficacy, yielding the results (M = 23.98, MD = 23.00, SD = 4.96). The degrees of understanding of the practice were then calculated, as shown in Table 2, which shows that 21 respondents had a low understanding of inclusive early childhood education practice, 107 respondents had an average level of understanding, and 5 respondents had a good understanding of their practice.

These observations were also subjected to the statistical test in order to find out whether they reflected the actual picture of the outcome of the test. The Chi-Square test was used resulted in $\chi^2(2, N = 133) = 135.759, p < 0.050$, to prove a significant association between the expected and observed results pertaining to the teachers’ levels of Understanding Inclusive ECE in that regard.

Table 2: Teachers’ Levels of Understanding Inclusive ECE

		Sex of Respondents		
		Male	Female	Total
Teachers' Level of Understanding Inclusive ECE	Average	14	93	107
	High	0	5	5
	Low	4	17	21
Total		18	115	133

Thereafter, the Related-Samples Wilcoxon Signed Rank Test was used to prove the existence of significant effect of the teachers’ understanding of ECE inclusive education and their self-efficacy at $p < 0.001$. This entails that the general teachers’ self-efficacy depended on their general understanding of and knowledge in the inclusive early childhood education delivery.

However, in terms of the various levels of understanding, considered to be low average and High, the Independent-Samples Kruskal-Wallis Test, which was run, could not prove the effect of these levels of understanding on the level of teacher’s self-efficacy, at $p = 0.077$, as shown in Table 3.

Additionally, the positive effect of Teachers’ Understanding of ECE Inclusive Education of their Self-efficacy Level was proven with $t(2, 132) = -2.041, \rho = 0.043$, at $\alpha = 0.050$ meaning that the better understanding of the ECE inclusive education by teachers, translates into their higher self-efficacy in the practice.

Furthermore, some possible extraneous variables were tested against teachers’ self-efficacy. To start with, a positive correlation or $r(131) = +0.201, p = 0.020$, at was found between teachers’ motivation and their self-efficacy

Table 3: The effect of Teachers’ Level of Understanding Inclusive ECE on their Self-efficacy Level

Null Hypothesis	Test	Sig.	Decision
1 <i>The distribution of Teachers’ Self-efficacy Level is the same across categories of Teachers’ Level of Understanding Inclusive ECE .</i>	Independent-Samples Kruskal-Wallis Test	0.077	Retain the null hypothesis

Note: Asymptotic significances are displayed. The significance level is 0.050.

in inclusive ECE. This means the higher their motivation to teach ECE class, the more their self-efficacy in the practice. This relationship was also confirmed with the Related-Samples Wilcoxon Signed Rank Test, which proved a significant effect of Teacher motivation on their efficacy in the inclusive Early childhood Education, with , as depicted in Table 4.

Not only that, the Independent-Samples Mann-Whitney U Test rejected the teacher’s gender as a factor of their self-efficacy at $p = 0.587$, and their training at $p = 0.188$.

Nonetheless, Related-Samples Wilcoxon Signed Rank Test proved that the teachers’ age influenced their self-efficacy supported by ANOVA test with $F(2,132) = 0.518, \rho = 0.473$, to isolate age from the possible factors of teachers’ self-efficacy in inclusive Early childhood education delivery.

Table 4: Test for Effect of Teachers' Motivation to Teach ECE Class on their Self-efficacy Level

Null Hypothesis	Test	Sig.	Decision
1 <i>The median of differences between Teachers’ Self-efficacy Level and Teachers’ Motivation to Teach ECE Class equals 0.</i>	Related-Samples Wilcoxon Signed Rank Test	0.000	Reject the null hypothesis.

Note: Asymptotic significances are displayed. The significance level is 0.050.

Also, Related-Samples Wilcoxon Signed Rank Test affirmed the length of service as a factor of teacher’s self-efficacy with $p = 0.001$. However, the Independent-Samples Kruskal-Wallis Test rejected the Area of Specialization, Level of Education and Category of training, respectively at $p = 0.991, p = 0.242$ and $p = 0.188$

The Independent-Samples Kruskal-Wallis Test was used to retain the null hypothesis that the teachers’ level of education exerted no significant influence of their self-efficacy level at $p = 0.242$.

4. Discussion

The findings from multiple statistical tests are meticulously compared to existing theories in the literature in order to provide a comprehensive interpretation of the results regarding the influence of teachers’ comprehension of inclusive Early Childhood education on their self-efficacy.

Firstly, the majority of participants in this study displayed an average level of self-efficacy in inclusive Early Childhood education, with an average score of 86 and 3 participants scoring high in self-efficacy. This is a positive indication, particularly because, as supported by Pelatti and Justice (2014), teachers with higher levels of self-efficacy tend to create a more inclusive and welcoming educational environment for their students. However, similar to trees shaping a forest, self-efficacy is not independent of other factors that contribute to the smooth functioning of inclusive early childhood education. One of the most significant factors associated with this variable is teachers’ beliefs, knowledge, and understanding of inclusive Early Childhood education (Sawyer et al., 2022).

In terms of their level of understanding of inclusive early childhood education, the results of this study revealed an overwhelming level of understanding, with 112 participants demonstrating an advanced level of understanding in this area. Additionally, the impact of teachers’ understanding of inclusive ECE on their self-efficacy was found to be statistically

significant. This implies that teachers' overall self-efficacy depends on their general understanding and knowledge of inclusive early childhood education practices. This finding aligns with the observations of Sawyer *et al.* (2022), who noted that enhancing teachers' educational knowledge has the potential to elevate their level of self-efficacy. However, the scenario differs when considering various specific levels of understanding. Nonetheless, this does not have a detrimental effect on the situation. It simply suggests that whether a teacher's understanding of inclusive early childhood education is low, average, or high, it does not impact their self-efficacy significantly; what matters is the presence of this type of knowledge.

This further implies that a better understanding of inclusive education in Early Childhood Education (ECE) by teachers translates into higher self-efficacy in their practice. Fraser and Lancaster (2012) argued that if teachers and administrators would recognize and appreciate the importance of early childhood inclusive education, it would potentially eliminate superficial participation in the sector. This means that teachers with a higher understanding of inclusive early childhood education and who are also self-efficacious are likely to be highly motivated to handle children in need of special education in an inclusive classroom.

This fact was confirmed by a positive correlation ($r = +0.201$) between teachers' motivation and their self-efficacy in inclusive ECE. Coincidentally, Bahufite *et al.* (2022) also found that motivation is related to metacognitive knowledge, which is a factor of knowledge and understanding. This means that motivation enhances knowledge, which in turn boosts self-efficacy. In other words, the higher their motivation to teach ECE classes, the greater their self-efficacy in practice. However, this view differs from Hofman and Kilimo's (2014) findings, which suggest that early childhood special education teachers who perceive themselves as less capable are more motivated to improve their skills and knowledge compared to teachers with a high level of self-efficacy.

The current study sought to delve deeper into exploring other personal factors that can be considered as significant determinants of teachers' self-efficacy. On one hand, the study found that teachers' age and experience have a proven impact on their self-efficacy. This finding aligns with the research conducted by Leyser *et al.* (2011), who identified teachers' experience with inclusion as the most influential factor shaping their understanding of inclusive education. However, Schwab and Alnahdi (2020) could not establish a significant effect of teachers' experience on their self-efficacy. Instead, they highlighted teachers' attitudes as the ultimate factor affecting their self-efficacy.

On the other hand, the study conducted by Hofman and Kilimo (2014) concluded that teachers' qualifications and attitudes hinder effective implementation of early childhood inclusive education. Conversely, this study does not consider factors such as teachers' gender, area of specialization, level of education, and training category as determinants of their self-efficacy level. This implies that regardless of gender, area of specialization, level of education, or training category (primary, secondary, or early childhood education), teachers' confidence in their ability to handle an inclusive classroom remains unchanged as long as they have acquired sufficient knowledge and understanding in this area. Similarly, a study conducted by Schwab and Alnahdi (2020) in Austria revealed that teachers had high self-perceptions in their use of inclusive teaching practices. However, they also found that primary school teachers tended to utilize more inclusive teaching practices compared to their secondary school counterparts.

The findings of this study indicate that teachers' understanding, along with associated variables like motivation and experience, can be considered the strongest predictors of their self-efficacy in inclusive early childhood education. However, previous research has introduced the notion of teachers' attitude towards inclusive education as a significant determinant of self-efficacy. Although beyond the scope of this study, it is acknowledged that attitude is considered part of teachers' understanding of the practice. Nonetheless, further exploration of this topic, particularly in the local context, could provide valuable insights.

5. Conclusion

The findings of this study led to the conclusion that teachers' understanding of the early childhood inclusive education principles, enhances their confidence and hence self-efficacy to handle this type of class. The motivation resulting from this knowledge is also perceived to be the ultimate engine to this boost in self-efficacy.

Moreover, the longer teachers stay in-service, the more exposure they develop to the different skills needed to handle an inclusive classroom, which increases their knowledge and understanding of the practice and hence their self-efficacy.

It is however, important to note that teachers' gender, area of specialisation, the level and category of education do not affect their self-efficacy, as long as they are more knowledgeable in this area of practice and have acquired enough experience in handling children with special need education.

It can be deduced through this study that; the teachers' attitude is another interesting factor of self-efficacy that requires further exploration in future studies. Moreover, empowering teachers is crucial for successful inclusive early childhood education. This can be done by providing ongoing professional development opportunities, which will enable teachers to acquire the necessary knowledge and skills to effectively address the diverse needs of their students.

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