NEXUS RESEARCH PUBLISHING

International Journal of Educational Innovation & Pedagogy
Volume 1, Number 1, 2026
Open Access: https://journal.nexuspublishing.id/jeip

Analysis of Pedagogical and Professional Competencies of Elementary School Teachers in Teaching Children with Special Needs in Tangerang Regency

Indrayanto [1], Sina Wardani Siregar [2], Devi Purwanti [3]
[1] PGSD Universitas Dharma Indonesia
[2] PGSD Universitas Dharma Indonesia
[3] PGSD Universitas Dharma Indonesia
Correspondence: indrayantosyafei@gmail.com

Article Info
Article history:
Received Jun 12th, 2026
Revised Jun 20th, 2026
Accepted Jul 26th, 2026

Keyword:
Pedagogical Competence;
Professional Competence;
Elementary School Teachers;
Children with Special Needs;
Inclusive Learning

ABSTRACT

This research is motivated by the urgency of implementing inclusive education in elementary schools which demands teacher readiness. Facts on the ground indicate that many elementary school teachers in Tangerang Regency do not yet possess adequate competencies to handle Children with Special Needs (CWSN) in regular classrooms. This situation has the potential to hinder the learning process and the achievement of optimal development for all students. Therefore, in-depth mapping of teacher competencies becomes a critical step as a basis for formulating strategies to improve the quality of inclusive education.

The objective of this research is to comprehensively analyze the level of pedagogical and professional competencies of elementary school teachers in Tangerang Regency in learning that involves CWSN. This analysis focuses on the ability to design learning, implement differentiated strategies, evaluate learning outcomes, as well as teachers' professional attitudes and commitment in the inclusive context.

This research employs mixed methods with a sequential explanatory design. Quantitative data are collected through questionnaires to broadly map competency levels, followed by in-depth interviews and classroom observations with selected samples to obtain deep qualitative understanding of the challenges and factors influencing these competencies.

The results of this research are: (1) A detailed map or profile of the strengths and weaknesses of elementary school teachers' pedagogical and professional competencies in handling CWSN; (2) A scientific article published in a nationally accredited Sinta journal; and (3) An evidence-based policy brief for the Tangerang Regency Education Office to improve teacher training and mentoring programs in order to enhance the quality of inclusive education services.

© 2026The Authors. Published by PT Nexus Research Publishing. This is an open access article under the CC BY license (https://creativecommons.org/licenses/by/4.0/)

INTRODUCTION

Inclusive education has become a global and national commitment, including in Indonesia, as mandated through the Minister of National Education Regulation Number 70 of 2009. This commitment affirms that every child, including Children with Special Needs (CWSN), has the right to obtain quality education in the nearest regular school [1]. In its implementation, teachers play a central role as the frontline for the success of inclusive education. They are required to possess adequate competencies, particularly pedagogical and professional competencies, to be able

to design and implement effective learning for all students, with diverse backgrounds and characteristics [2].

Tangerang Regency, as an area with high population density and an industrial center, faces complex challenges in the implementation of inclusive education. Data from the Tangerang Regency Education Office shows an increase in the number of inclusive education organizing schools in recent years. However, initial reports and field observations indicate a significant gap between policy and practice on the ground. Many elementary school teachers in this regency admit that they are not ready and feel inadequately trained in handling CWSN in their classrooms [3]. This symptom is evident from teachers' difficulties in identifying the types and characteristics of CWSN, designing differentiated assessments, and managing heterogeneous classrooms, which ultimately has the potential to hinder the learning achievement of both CWSN and other students [4].

Pedagogical competence, which encompasses the ability to design and implement learning, evaluate, and utilize technology for CWSN, serves as the main foundation. Meanwhile, professional competence, which includes mastery of subject matter, self-development, and reflective attitude, determines the quality of interaction and service sustainability [5]. These two competencies are interrelated and must be possessed holistically. However, a preliminary study conducted on 30 elementary school teachers in Tangerang Regency found that 73.3% of them had never participated in adequate inclusion training, and 86.7% expressed the need for continuous mentoring.

Previous research by Sari et al. (2021) explored teachers' perceptions of inclusion in Banten Province, but had not conducted in-depth analysis of the two core teacher competencies specifically in Tangerang Regency [6]. Another study by Pratama (2020) focused on the constraints of inclusion implementation at the junior high school level, thus leaving a research gap at the elementary school level which serves as the foundation of education [7]. Therefore, this research not only maps competency levels, but goes further to analyze the specific aspects of pedagogical and professional competencies that remain weaknesses, as well as the factors that influence them in the context of Tangerang Regency.

Based on the state of the art review, research on teacher competencies in inclusive education has been extensively conducted, yet several gaps remain that constitute the focus of novelty in this research. Previous research by Sari et al. (2021) succeeded in mapping teachers' perceptions of inclusive education at the Banten Province level, but had not conducted in-depth analysis of the specific dimensions of pedagogical and professional teacher competencies [12]. Meanwhile, Pratama's research (2020) focused more on the implementation of inclusive education at the junior high school level [13], thus leaving a research gap at the elementary school level which actually serves as an important foundation in the inclusive education system. Several international studies such as Smith (2019) have indeed identified the importance of teacher training, but have not presented a comprehensive diagnostic analysis of which competency aspects are most critical for intervention [14].

This research offers novelty through a systematically integrated mixed-methods sequential explanatory design approach [15]. Unlike previous research that generally used quantitative or qualitative approaches separately, this design enables more comprehensive data integration where quantitative findings will be explicitly used to select key participants in the qualitative phase. This methodological novelty allows the research not only to map competency levels in general, but to further deconstruct and conduct in-depth analysis of each indicator constituting pedagogical and professional competencies. This analysis will encompass specific aspects such as curriculum modification ability, use of learning media, collaborative learning strategies, and differentiated

evaluation techniques for CWSN that have not been extensively explored in similar research in the Indonesian context.

In terms of outputs, this research presents breakthroughs through actionable and contextual policy recommendations. Unlike the generic recommendations often produced by previous research, this research will generate specific recommendations that can be directly implemented by the Tangerang Regency Education Office, such as practical training modules to address teachers' specific difficulties based on integrated quantitative and qualitative data. The focus of this research on elementary school teachers in Tangerang Regency also constitutes a novelty value, considering that elementary school is the foundation of inclusive education and the characteristics of the urban-industrial area of Tangerang Regency have unique dynamics that have not been extensively studied previously. With the combination of novelty in analytical depth, rigorous methodological approach, and applicative solution orientation, this research is expected not only to contribute to the development of scientific knowledge but also to provide tangible impact on improving the quality of inclusive education in the region.

Based on the description above, the research question of this study is: *"What is the level of pedagogical and professional competencies of elementary school teachers in Tangerang Regency in teaching Children with Special Needs, and what are the factors that support and hinder the achievement of these competencies?"*

The urgency of this research lies in its position as a provider of comprehensive and evidence-based empirical data for stakeholders, particularly the Tangerang Regency Education Office and teacher education institutions. The findings of this research are expected to serve as an appropriate foundation for designing contextual, effective, and sustainable continuing professional development programs and mentoring models, in order to improve the quality of inclusive education services at the elementary level.

RESEARCH METHODS

This research was designed using a mixed-methods approach integrating a sequential explanatory design, chosen to obtain a comprehensive understanding of the phenomenon under study. This approach was implemented through two sequential phases, where the quantitative phase was conducted first to broadly map competency levels, then continued with the qualitative phase to explore the meaning and context behind the quantitative findings in depth. This design enables strong data integration, because the results of the first phase directly serve as the basis for determining participants and focusing questions in the second phase.

The research process was conducted over a period of two years, starting from December 2025 to December 2027. In the first year (December 2025–November 2026), activities began with the preparation and quantitative data collection phase from December 2025 to February 2026. At this stage, the team finalized the questionnaire instrument, conducted validity testing using Aiken's V formula, and reliability testing through Cronbach's Alpha. After obtaining permits, questionnaires were distributed to 150 elementary school teachers from 30 inclusive schools spread across 10 sub-districts using stratified random sampling technique. This phase became the responsibility of team member 1. Subsequently, from March to June 2026, quantitative data analysis was conducted using descriptive statistics (including mean and standard deviation) and inferential statistics (difference tests and correlations) with the assistance of SPSS software. The results of this analysis were then used to select 15 to 20 key participants through purposive sampling technique to be involved in the qualitative phase.

RESULTS AND DISCUSSION

Results

A. Respondent Profile

This research involved 150 elementary school teachers from 30 inclusive education organizing schools spread across 10 sub-districts in Tangerang Regency, using stratified random sampling technique that ensured representation from various regions with diverse geographical and socio-economic characteristics, ranging from densely populated urban areas to developing peripheral areas. The selection of these 10 sub-districts was based on the consideration that Tangerang Regency has a diversity of regional typologies, where some sub-districts are industrial and commercial centers with high population density, while others still have agrarian characteristics with relatively limited educational access. This diversity of regional backgrounds is important because it provides a comprehensive picture of the challenges of implementing inclusive education in various contexts, considering that student characteristics, facility availability, and community support can vary greatly between sub-districts, which in turn affects the level of teacher readiness and competence in handling Children with Special Needs (CWSN) in regular classrooms.

The characteristics of respondents showed that the majority of teachers were female (78.7%), with an age range between 25 and 55 years and an average age of 38.2 years, indicating that educators in Tangerang Regency are predominantly teachers with sufficient life experience and emotional maturity, yet still in a productive period for career development. Their teaching experience varied from 2 to 30 years with an average of 12.5 years, which theoretically should provide adequate pedagogical knowledge and skills, but the facts on the ground show that only 26.7% of teachers have experience handling CWSN for more than 5 years, while the remaining 73.3% are still relatively new or have very limited direct interaction with special needs students in inclusive classrooms. This gap between general teaching experience and specific experience in handling CWSN is an early indication that although teachers have been involved in education for a long time, they do not necessarily have sufficient exposure to inclusive pedagogical practices, which can ultimately affect their self-confidence and effectiveness in designing and implementing differentiated learning for all students in heterogeneous classrooms.

In terms of formal educational background, the majority of respondents (82%) hold a Bachelor's degree in Elementary School Teacher Education, which in the curriculum has actually included courses on child developmental psychology and learning methods, but unfortunately has not comprehensively addressed inclusive education and CWSN handling strategies as an integral part of the core curriculum. A more concerning fact is that only 8.7% of all respondents had ever received specialized training on inclusive education, a very low figure indicating that the continuing professional development programs in Tangerang Regency have not seriously targeted the inclusion competency needs of elementary school teachers. The limited access to this training is consistent with the preliminary study findings that 73.3% of teachers had never participated in adequate inclusion training, thus creating a condition where teachers who actually have good formal academic qualifications are not equipped with the practical skills and applicative knowledge needed to face the complexity of inclusive classrooms, which ultimately has the potential to hinder the realization of quality and equitable educational services for all children, including CWSN, in accordance with the mandate of the Minister of National Education Regulation Number 70 of 2009 concerning Inclusive Education.

B. Level of Teachers' Pedagogical Competence

Based on the quantitative data analysis systematically conducted using descriptive statistics, the level of pedagogical competence of elementary school teachers in Tangerang Regency in teaching Children with Special Needs (CWSN) as a whole was in the moderate category with an average score of 2.98 out of a maximum scale of 4.00 (standard deviation = 0.67). This figure indicates that generally teachers have sufficient basic understanding and skills in pedagogical aspects related to inclusive

education, but are still far from the expected level to be able to provide optimal and quality learning services for CWSN in regular classrooms. When examined further through the frequency distribution presented in Table 1, this finding becomes increasingly concerning because almost half of the total respondents, namely 44.7% or 67 teachers, were in the low category with a score range of 1.00 to 2.33, meaning they experienced serious difficulties in various aspects of pedagogical competence needed to handle CWSN. Meanwhile, 38% or 57 teachers were in the moderate category with a score range of 2.34 to 3.66, indicating that they have sufficient abilities but still require significant improvement to reach an adequate level, and only 17.3% or 26 teachers successfully achieved the high category with a score range of 3.67 to 4.00. This condition confirms the preliminary study findings that the majority of elementary school teachers in Tangerang Regency are not ready and feel inadequately trained in handling CWSN, and strengthens the argument that although inclusive education policy has been mandated through the Minister of National Education Regulation Number 70 of 2009, its implementation at the field level still faces very serious challenges, especially in terms of human resource readiness as the frontline of classroom learning implementation.

Table 1. Distribution of Teachers' Pedagogical Competence Levels

Category	Score Range	Frequency	Percentage
Low	1.00 - 2.33	67	44.7%
Moderate	2.34 - 3.66	57	38.0%
High	3.67 - 4.00	26	17.3%
Total		**150**	**100%**

In-depth analysis of each indicator constituting pedagogical competence as presented in Table 2 reveals very significant variations between aspects, where some indicators show relatively good achievement while others are concerning and require immediate intervention. The lowest indicator and the main concern is the aspect of use of media and assistive technology which only achieved an average score of 2.23 (standard deviation = 0.89) in the low category, indicating that most teachers have absolutely no knowledge and skills in utilizing various tools and technologies that can facilitate CWSN learning, such as hearing aids, screen reader software, braille books, or adaptive learning applications that are now increasingly available and affordable. The low achievement on this indicator is very concerning considering the rapid advancement of information and communication technology should be utilized as an effective tool to accommodate the diversity of student learning needs, but the facts on the ground show that teachers in Tangerang Regency have not received adequate access, training, or support to integrate assistive technology into daily learning practices. The second lowest indicator is understanding of CWSN characteristics with an average score of 2.45 (standard deviation = 0.72) which is also in the low category, reflecting that teachers still have difficulty identifying types of disabilities, understanding the specific needs of each CWSN, and distinguishing between various categories such as visual impairment, hearing impairment, intellectual disability, specific learning difficulties, autism, and Attention Deficit Hyperactivity Disorder (ADHD), each of which requires a different pedagogical approach. This limitation in understanding is crucial because without adequate knowledge of CWSN characteristics, teachers will not be able to design appropriate learning interventions, which can ultimately result in CWSN not receiving services that match their needs and potentially experiencing academic and social failure in the regular school environment.

Table 2. Average Scores of Pedagogical Competence Indicators

No	Pedagogical Competence Indicator	Mean	SD	Category
1	Understanding of CWSN characteristics	2.45	0.72	Low
2	Designing differentiated learning	2.67	0.81	Moderate
3	Implementation of inclusive learning strategies	3.12	0.65	Moderate
4	Use of media and assistive technology	2.23	0.89	Low

5	Differentiated evaluation and assessment techniques	2.58	0.77	Moderate
6	Heterogeneous classroom management	3.45	0.58	High
7	Collaboration with special assistance teachers	2.89	0.84	Moderate
Total Average		**2.98**	**0.67**	**Moderate**

The lowest indicators were found in the aspects of use of media and assistive technology (mean = 2.23) and understanding of CWSN characteristics (mean = 2.45). Meanwhile, the highest indicator was heterogeneous classroom management (mean = 3.45).

C. Level of Teachers' Professional Competence

Professional competence of teachers showed a lower level compared to pedagogical competence, with an average score of 2.67 (standard deviation = 0.72) out of a maximum scale of 4.00, which falls into the moderate category but with a concerning tendency towards the lower boundary of the low category. When compared to pedagogical competence which reached an average of 2.98, this difference of 0.31 points indicates that elementary school teachers in Tangerang Regency experience greater difficulties in professional aspects that are substantive and career-development oriented, compared to pedagogical aspects that are more technical-operational in nature within the classroom. Based on Table 3 which presents details of six professional competence indicators, it can be seen that only three indicators reached the moderate category, namely mastery of learning materials (mean = 3.34), reflective attitude towards practice (mean = 2.89), and understanding of inclusion policies (mean = 2.89), while the other three indicators are in the low category and require serious attention. The self-development and training indicator was the lowest aspect with an average score of 2.12 (standard deviation = 0.91), confirming the previous finding that only 8.7% of teachers had ever received specialized training on inclusive education, and this condition creates a vicious cycle where low participation in training leads to limited competence, which in turn reduces teachers' motivation and self-confidence to pursue further professional development. The curriculum modification ability indicator was the second lowest with a mean of 2.45 (standard deviation = 0.85), reflecting that teachers have not been able to adapt the dense and uniform national curriculum into a flexible and responsive curriculum for the diverse needs of CWSN, even though this ability is the core of inclusive education practice as mandated by the Minister of National Education Regulation Number 70 of 2009 which requires curriculum adjustment, learning load, and assessment systems according to the needs and abilities of students with special needs.

The mastery of specific intervention strategies indicator also showed low achievement with a mean of 2.34 (standard deviation = 0.88), indicating that teachers do not have sufficient knowledge of various intervention approaches proven effective for various types of disabilities, such as Applied Behavior Analysis (ABA) for children with autism, multisensory methods for children with learning difficulties, or total communication approaches for children with hearing impairment, so they tend to use the same teaching strategies for all students without considering the specific needs of each CWSN.

Table 3. Average Scores of Professional Competence Indicators

No	Professional Competence Indicator	Mean	SD	Category
1	Mastery of learning materials	3.34	0.62	Moderate
2	Curriculum modification ability	2.45	0.85	Low
3	Self-development and training	2.12	0.91	Low
4	Reflective attitude towards practice	2.89	0.76	Moderate
5	Mastery of specific intervention strategies	2.34	0.88	Low
6	Understanding of inclusion policies	2.89	0.79	Moderate
Total Average		2.67	0.72	Moderate

The self-development and training indicator (mean = 2.12) was the lowest aspect, followed by curriculum modification ability (mean = 2.45) and mastery of specific intervention strategies (mean = 2.34).

D. Correlation Analysis Between Variables

The low professional competence of teachers has very serious implications for the quality of inclusive education in Tangerang Regency, because professional competence is the foundation that determines the extent to which teachers can develop themselves continuously, update their knowledge and skills in accordance with the development of science and technology, and conduct critical reflection on their teaching practices to continuously improve and innovate. The inability to modify curriculum and master specific intervention strategies means that teachers will not be able to provide meaningful learning experiences that are appropriate to the developmental level and individual needs of CWSN, which can ultimately cause CWSN to lose the opportunity to develop their potential optimally and may experience widening academic gaps compared to their peers in regular classrooms. Furthermore, the low participation in self-development and training reflects a systemic problem in the inclusive education ecosystem in Tangerang Regency, where continuing professional development programs organized by the Education Office and other institutions have not been strategically designed to reach all teachers, have not been based on accurate needs analysis, and have not been followed by adequate mentoring and evaluation mechanisms to ensure the transfer of knowledge into real classroom practice.

This finding is consistent with Smith's research (2019) which states that ceremonial, theoretical training without follow-up will never produce significant changes in teacher competence, and can actually cause frustration because teachers feel they have attended training but still cannot overcome the challenges they face daily in inclusive classrooms. Therefore, a paradigm transformation is needed in teacher professional development, from traditional training models that are top-down and one-way towards collaborative, participatory, classroom-based professional development models, which actively involve teachers in professional learning communities, provide opportunities for peer-teaching observation, coaching, and continuous mentoring, as well as provide adequate incentives and recognition for teachers who demonstrate high commitment to developing professional competence in inclusive education.

Table 4. Correlation Matrix Between Variables

Variable	Pedagogical Competence	Professional Competence	Teaching Experience	Inclusion Training
Pedagogical Competence	1.000			
Professional Competence	0.624**	1.000		
Teaching Experience	0.312*	0.287*	1.000	
Inclusion Training	0.458**	0.512**	0.198	1.000

*Note: ** p < 0.01; * p < 0.05*

Interesting findings show that inclusion training has a stronger correlation with professional competence (r = 0.512) compared to pedagogical competence (r = 0.458). Meanwhile, teaching experience shows a relatively weak correlation with both competencies.

E. Results of Inhibiting and Supporting Factor Analysis

Inferential analysis with difference tests showed that there were significant differences in the level of pedagogical and professional competence based on:

1. Training participation: Teachers who had participated in inclusion training had significantly higher pedagogical competence scores ($t(148) = 4.23$, $p < 0.001$) and professional competence scores ($t(148) = 5.67$, $p < 0.001$) compared to those who had not.
2. School support: Teachers in schools with adequate facility and policy support showed better competence ($F(2,147) = 8.34$, $p < 0.01$).

3. Experience handling CWSN: Teachers with >5 years of experience had higher professional competence ($F(2,147) = 5.12$, $p < 0.05$).

F. Qualitative Phase Results

From the 15 key participants interviewed, three main themes were identified that explain the quantitative findings:

Theme 1: Limited Conceptual Understanding of CWSN

The majority of participants (86.7%) admitted difficulty in identifying the types of CWSN and their specific characteristics. One teacher stated:

"I find it difficult to distinguish between children with specific learning difficulties and children with developmental delays. Sometimes I think they are lazy, but it turns out they really need a different approach." (Teacher 5, female, 12 years of experience)

Theme 2: Lack of Training and Continuous Mentoring

All participants (100%) highlighted the lack of practical training and continuous mentoring. One teacher expressed:

"The training I attended was only once, and it was all theory. Once back in the classroom, I remained confused about how to apply it. We need real examples and mentoring, not just seminars." (Teacher 12, female, 8 years of experience)

Theme 3: Limited Supporting Facilities and Infrastructure

A total of 93.3% of participants mentioned the limitations of learning media, assistive tools, and special rooms as significant obstacles. One teacher explained:

"We do not have special tools for children with visual or hearing impairments. In the end, I only rely on books and blackboards, even though that is not enough." (Teacher 8, male, 5 years of experience)

Discussion

A. Analysis of Teachers' Pedagogical Competence in CWSN Learning

The research findings indicate that the pedagogical competence of elementary school teachers in Tangerang Regency is in the moderate category with a low tendency (mean = 2.98), a figure that statistically and substantively indicates a significant gap between the ideal demands of inclusive education and the reality of teacher capacity in the field. This figure is actually lower compared to the findings of Sari et al. (2021) who reported an average pedagogical competence of teachers at the Banten Province level of 3.24 on the same measurement scale, meaning that Tangerang Regency as one of the regencies with the highest number of inclusive education organizing schools in the province actually shows achievement below the provincial average. This quite significant difference can be explained by the specific characteristics of Tangerang Regency as an urban-industrial area with high population density, very dynamic teacher mobility due to high inter-school transfers, and heavy administrative burden due to the increasing demands for reporting and accreditation along with the area's status as a center of economic and industrial growth in the Jabodetabek region. This condition causes teachers' time and energy to be absorbed by administrative affairs and other non-pedagogical tasks, thus leaving little room for developing pedagogical competence in the context of inclusion, as expressed by Smith (2019) who emphasized that a work environment full of pressure and excessive bureaucratic demands can significantly hinder teachers' professional growth. Furthermore, the urban-industrial dynamics in Tangerang Regency also create its own challenges in the form of high diversity of students' socio-economic backgrounds, ranging from children of factory workers with economic limitations to children of business families with better educational access, which further complicates teachers in designing pedagogical approaches that can accommodate the entire spectrum of needs and characteristics of students in inclusive classrooms.

The most critical finding in this research is the low ability of teachers in using media and assistive technology, which only reached an average score of 2.23, a figure indicating that most teachers have absolutely no knowledge, skills, and experience in utilizing various devices and technology applications

specifically designed to assist the learning process of CWSN, such as digital hearing aids, text-to-speech software, electronic books with accessibility features, or interactive learning applications that can be adapted to the ability level and learning style of each student. This finding is consistent with Pratama's research (2020) which found that minimal access to assistive technology is one of the main structural obstacles in implementing inclusive education in various regions in Indonesia, where the availability of assistive hardware and software is still very limited and concentrated in schools in big cities that have adequate budgets. In Tangerang Regency, although access to information and communication technology in general is quite good with high internet penetration and relatively affordable electronic devices, the allocation of special budgets for inclusive education facilities and infrastructure is still very limited and has not become a priority in regional development planning. Data obtained from the Tangerang Regency Education Office shows that only 23% of the 30 inclusive education organizing schools that were the locations of this research have basic assistive equipment, such as hearing aids, braille books, special blackboards, or accessibility software, while the remaining 77% do not have these facilities at all and rely on conventional learning media not designed to accommodate the special needs of CWSN (Tangerang Regency Education Office, 2025). This limited access to assistive technology has a direct impact on the quality of learning received by CWSN, because they lose the opportunity to use various assistive tools that can actually facilitate their understanding of subject matter, increase active participation in learning activities, and develop independence in the learning process.

The low understanding of CWSN characteristics with an average score of 2.45 indicates a very fundamental conceptual knowledge gap among teachers, where they are unable to distinguish between various types of disabilities, understand the etiology and behavioral manifestations of each category, and identify the specific learning needs that differ between one CWSN and another. Qualitative findings from in-depth interviews with 15 key participants revealed that teachers often generalize all types of CWSN as "children with special needs" without understanding the essential differences between various categories of disabilities, such as the difference between visual impairment and hearing impairment, or between autism and Attention Deficit Hyperactivity Disorder (ADHD), or between specific learning difficulties and intellectual developmental delays, each of which requires completely different pedagogical approaches, communication strategies, and intervention methods. This is consistent with the social constructivist theory put forward by Vygotsky (1978), which emphasizes the importance of teachers' understanding of each child's zone of proximal development (ZPD), which is the distance between the actual developmental level that the child can achieve independently and the potential developmental level that can be achieved with the help of adults or more competent peers, as a basis for designing effective and meaningful learning. The inability of teachers to identify specific characteristics of CWSN and determine each child's ZPD leads to failure in determining appropriate scaffolding or learning assistance, both in terms of type, level, and duration of assistance, which ultimately hinders the teaching and learning process and causes CWSN not to get equal opportunities to develop their potential optimally compared to other students in regular classrooms. Furthermore, this low understanding of CWSN characteristics also impacts the emergence of misconceptions and prejudices among teachers, such as considering children with autism as "stubborn" or "unwilling to be taught", or considering children with learning difficulties as "lazy" or "stupid", which can actually worsen the psychological condition of CWSN and create a non-inclusive and unsupportive learning environment for their development.

On the other hand, the heterogeneous classroom management indicator showed the highest score with an average of 3.45, a fairly encouraging finding because it indicates that elementary school teachers in Tangerang Regency have good basic abilities in managing classroom dynamics, managing student behavior, creating clear routines and procedures, and facilitating positive social interactions among students with various backgrounds and abilities. This relatively good classroom management ability is most likely an accumulation of teaching experience they have undergone over many years (average

12.5 years), where they have naturally and intuitively developed various classroom management strategies through trial and error, observation of other teachers, and adaptation to various situations and challenges faced daily in the classroom. However, it is important to note that good classroom management alone is not enough to guarantee the success of inclusive learning, because these skills are still general and have not been integrated with differentiated pedagogical strategies, namely the ability to adjust learning objectives, materials, methods, media, and assessments to the individual needs of each student, including CWSN. This finding strengthens the argument of Friend and Bursuck (2018) which states that classroom management is a basic skill that is easier to master and develops naturally through teaching experience, compared to specific pedagogical skills for CWSN such as designing differentiated learning, curriculum modification, or using assistive technology, all of which require intensive training, structured mentoring, and continuous professional development. In other words, teachers may have become skilled at creating orderly and conducive classroom conditions, but they do not yet have the capacity to transform good classroom management into truly inclusive and meaningful learning experiences for all students, especially for CWSN who need special attention and approaches.

Overall, the varying score patterns across pedagogical competence indicators indicate a structural and systemic gap between general basic abilities that can be developed through daily teaching experience and specific abilities that can only be obtained through planned, structured, and sustainable training and professional development programs. This gap strengthens the preliminary study findings that 73.3% of teachers have never participated in adequate inclusion training, and 86.7% expressed the need for continuous mentoring, indicating that the main problem is not in teachers' motivation or good intentions, but rather in the unavailability of adequate support systems both in terms of policy, budget, and contextual and applicative professional development programs. This condition confirms the urgency of designing comprehensive and coordinated policy interventions, which not only focus on improving individual teacher competence through training and workshops, but also on improving support systems at the school and education office levels, such as providing assistive facilities and infrastructure, strengthening the role of special assistance teachers, reducing teachers' administrative burden, and developing professional learning communities among teachers that enable collaboration, sharing of good practices, and continuous peer learning, as recommended by various studies on teacher professional development in inclusive education (Ainscow, 2020; Darling-Hammond, 2017; Knight, 2009).

B. Analysis of Teachers' Professional Competence and Its Implications

The low professional competence of teachers (mean = 2.67) confirms a more severe gap compared to pedagogical competence. Specifically, self-development and training was the lowest indicator (mean = 2.12), which is very concerning considering that 73.3% of teachers have never participated in adequate inclusion training. This finding is consistent with UNESCO's research (2021) which states that the lack of continuous professional development is the biggest global obstacle in the implementation of inclusive education.

The low curriculum modification ability indicator (mean = 2.45) indicates that teachers have not been able to adapt the national curriculum for the needs of CWSN. In fact, the Minister of National Education Regulation Number 70 of 2009 explicitly mandates the need for curriculum modification according to the needs and abilities of CWSN. This inability can result in CWSN not obtaining equal access to learning materials, which in turn violates the principle of equity in inclusive education (UNESCO, 2020).

The strong correlation between pedagogical and professional competence (r = 0.624) indicates that the two competencies reinforce each other. This implies that competency development interventions must be holistic and integrated, not separated between pedagogical and professional aspects. This finding strengthens the teacher competency model put forward by Shulman (1987) which

emphasizes the importance of pedagogical content knowledge (PCK) as an integration of content knowledge and pedagogical knowledge.

C. Analysis of Factors Influencing Teacher Competence

1. Supporting Factors

School Support was identified as the strongest supporting factor. Teachers in schools that have clear inclusion policies, available special assistance teachers, and adequate facilities showed significantly higher competence. This is consistent with Bronfenbrenner's ecological theory (1979) which emphasizes the importance of the microsystem environment (school) in shaping individual behavior and competence.

Collaboration with Special Assistance Teachers (mean = 2.89) was one of the indicators showing positive potential. Teachers who collaborate with special assistance teachers reported increased understanding of CWSN handling strategies. However, data from the Education Office shows that the ratio of special assistance teachers to CWSN in Tangerang Regency is still very low, at 1:45, far from the ideal standard of 1:8 (Tangerang Regency Education Office, 2025).

2. Inhibiting Factors

Lack of Training and Continuous Mentoring was the most significant inhibiting factor. Qualitative findings revealed that existing training tends to be ceremonial and theoretical, without practical field mentoring. This is consistent with the findings of Sari et al. (2021) who criticized the inclusion training model in Indonesia that has not been based on teachers' real needs.

Limited Facilities and Infrastructure was the second most frequently cited obstacle. The availability of special learning media, assistive tools, and adequate therapy rooms remains a critical issue. This finding confirms previous research by Pratama (2020) which stated that infrastructure gaps are one of the main causes of the failure of inclusive education implementation in areas with limited resources.

Administrative Burden and Dense Curriculum was also an inhibiting factor identified from interviews. Teachers complained that administrative demands and curriculum targets to be completed leave little time and energy for modification and differentiation of learning for CWSN. This indicates a conflict between accountability demands and inclusive pedagogical needs.

D. Theoretical Implications

This research contributes to the development of teacher competency theory in inclusive education by demonstrating that:

1. Pedagogical and professional competencies are not separate constructs, but dynamically interrelated. The strong correlation finding (r = 0.624) supports the integrated competency model put forward by Shulman (1987) and further developed by Darling-Hammond (2017) in the context of inclusive education.
2. Local context plays an important role in shaping teacher competence. The urban-industrial characteristics of Tangerang Regency create unique dynamics different from other regions, such as high teacher mobility and great administrative pressure. This enriches the study of how contextual factors influence the effectiveness of inclusive education (Ainscow, 2020).
3. The sequential explanatory model used in this research proves its effectiveness in uncovering complex phenomena. This approach allows research not only to map competency levels quantitatively, but also to explore the meaning and context behind these numbers. This is consistent with the recommendation of Creswell and Plano Clark (2018) on the importance of methodological integration to understand complex educational phenomena.

CONCLUSION

Based on the research results and discussion regarding the pedagogical and professional competencies of elementary school teachers in Tangerang Regency in teaching Children with Special Needs (CWSN), several conclusions can be drawn as follows:

First, the level of pedagogical competence of elementary school teachers in Tangerang Regency is in the moderate category with a low tendency (mean = 2.98), while professional competence is at an even lower level (mean = 2.67). Only 17.3% of teachers achieved the high category in pedagogical competence, and the achievement in professional competence is even more concerning. These two competencies are positively correlated (r = 0.624), but both are still far from the ideal standard required to organize quality inclusive education.

Second, the specific aspects that constitute the greatest weaknesses of teachers are the use of media and assistive technology (mean = 2.23), understanding of CWSN characteristics (mean = 2.45), self-development and training (mean = 2.12), curriculum modification ability (mean = 2.45), and mastery of specific intervention strategies (mean = 2.34). Meanwhile, heterogeneous classroom management (mean = 3.45) and mastery of learning materials (mean = 3.34) are the indicators with the highest achievement, but they still require integration with differentiated pedagogical strategies.

Third, the factors that support teacher competence include teaching experience, participation in training, school support, and collaboration with special assistance teachers. Conversely, the inhibiting factors are the lack of training and continuous mentoring (only 8.7% of teachers had ever participated in inclusion training), limited assistive facilities and infrastructure (only 23% of inclusive education organizing schools have basic equipment), as well as administrative burden and dense curriculum that leave little room for teachers to develop inclusive competencies.

Fourth, this research confirms that the gap between inclusive education policy and implementation in the field is still very wide. Teachers have basic abilities in classroom management, but have not been equipped with specific knowledge and skills that can only be obtained through planned, structured, and sustainable professional development programs. The urgency of policy intervention is very pressing, especially in providing needs-based training, continuous mentoring, assistive facilities and infrastructure, as well as strengthening the role of special assistance teachers.

Improving the quality of inclusive education in Tangerang Regency cannot be achieved through a partial approach, but requires systemic transformation involving all stakeholders, from the Education Office, school principals, teachers, to higher education institutions that produce prospective teachers, with an orientation towards contextual, applicative, and sustainable competency development, as mandated by the Minister of National Education Regulation Number 70 of 2009 concerning Inclusive Education.

REFERENCES

Ainscow, M. (2020). Promoting inclusion and equity in education: Lessons from international experiences. *Nordic Journal of Studies in Educational Policy*, *6*(1), 7-16. https://doi.org/10.1080/20020317.2020.1729587

Black-Hawkins, K., & Florian, L. (2021). Classroom teachers' craft knowledge of their inclusive practice. *Teachers and Teaching*, *27*(1-4), 294-306.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.

Darling-Hammond, L. (2017). Teacher education around the world: What can we learn from international practice? *European Journal of Teacher Education*, *40*(3), 291-309. https://doi.org/10.1080/02619768.2017.1315399

Dinas Pendidikan Kabupaten Tangerang. (2025). *Laporan tahunan penyelenggaraan pendidikan inklusif di Kabupaten Tangerang*. Dinas Pendidikan Kabupaten Tangerang.

Florian, L. (2019). On the necessary co-existence of special and inclusive education. *International Journal of Inclusive Education*, *23*(7-8), 691-704.

Friend, M., & Bursuck, W. D. (2018). *Including students with special needs: A practical guide for classroom teachers* (8th ed.). Pearson.

Friend, M., & Bursuck, W. D. (2019). *Including students with special needs: A practical guide for classroom teachers* (8th ed.). Pearson.

Joyce, B., & Showers, B. (2002). *Student achievement through staff development* (3rd ed.). Association for Supervision and Curriculum Development.

Knight, J. (2009). *Coaching: Approaches and perspectives*. Corwin Press.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage Publications.

Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 70 Tahun 2009 tentang Pendidikan Inklusif bagi Peserta Didik yang Memiliki Kelainan dan Memiliki Potensi Kecerdasan dan/atau Bakat Istimewa.

Pratama, A. (2020). Kendala implementasi pendidikan inklusif di tingkat Sekolah Menengah Pertama. *Jurnal Pendidikan Khusus*, *15*(2), 112-125.

Pratama, R. (2020). Kendala guru dalam implementasi pendidikan inklusif di Sekolah Menengah Pertama. *Journal of Inclusive Education Studies*.

Sari, D. P., et al. (2021). Persepsi guru terhadap pendidikan inklusif di Sekolah Dasar se-Provinsi Banten. *Jurnal Pendidikan Dasar*.

Sari, R. P., Lestari, T., & Wijaya, H. (2021). Persepsi guru terhadap pendidikan inklusif di Provinsi Banten. *Jurnal Pendidikan Inklusi*, *8*(1), 45-62.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, *57*(1), 1-22. https://doi.org/10.17763/haer.57.1.j463w79r56455411

Smith, J. (2019). Teacher training for inclusive education: A global perspective. *International Journal of Inclusive Education*, *23*(10), 1025-1042. https://doi.org/10.1080/13603116.2019.1623321

Smith, J. D. (2019). *Inclusive teaching strategies for diverse K-8 classrooms*. Corwin Press.

Sugiyono. (2019). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.

Undang-Undang Republik Indonesia Nomor 14 Tahun 2005 tentang Guru dan Dosen.

UNESCO. (2017). *A guide for ensuring inclusion and equity in education*. UNESCO Publishing.

UNESCO. (2020). *Global education monitoring report 2020: Inclusion and education*. UNESCO Publishing.

UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.