

The Effect of Principal Academic Supervision, Teacher Competence, and Work Environment on Elementary School Teacher Productivity

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Shintawati Shintawati^{1*}, Muhammad Syadeli Hanafi², Aan Hendrayana³

^{1,2,3}Doctoral Program in Education, Graduate School, Universitas Sultan Ageng Tirtayasa, Serang, Indonesia
Corresponding Email: *7782220026@untirta.ac.id

Abstract

This study focused on teacher productivity in Tangerang city public primary schools. Teachers face challenges such as administrative duties and changing curriculum. The research aimed to examine how principal supervision, teacher competence, and work environment affect elementary school teacher productivity in Tangerang city, Indonesia. The study used a quantitative descriptive literature review method. It analyzes 28 scientific articles. The results show that teacher competence has the highest impact on productivity. Academic supervision also influences productivity significantly. The work environment has a lesser, but important, effect. Managing these factors together can improve teacher performance. The study suggests continuous professional development is needed. Principals should provide supportive supervision. A positive work environment helps maintain motivation. The findings guide teachers and principals in Tangerang. They also help education policymakers. The goal is to improve teacher productivity and student outcomes. These recommendations aim for sustainable education improvements.

Keywords: Teacher Productivity, Academic Supervision, Teacher Competence, Work Environment, Educational Management

INTRODUCTION

Primary education builds students' character and skills at the beginning of their learning. Many factors affect the quality of elementary education today. Structural, cultural, and personal elements influence education now. Teacher productivity remains a major challenge today. Teachers deliver lessons and influence students every day. Productivity means teachers provide good teaching that supports student learning. Teachers aim to teach effectively and efficiently (Thai'Atun et al., 2024). Research shows that teacher productivity impacts student success. Schools need to support teachers to improve their work. Higher teacher productivity leads to better education results (Wilson et al., 2025).

School principals play a strategic role as managers and instructional leaders in education. They conduct academic supervision to support teachers' professional development and improve teaching quality (Pohan et al., 2024). Research shows academic supervision improves classroom management and teacher competence. Teacher competence includes pedagogical skills, subject knowledge, and assessment use, which are vital for effective teaching. A supportive work environment also affects teacher productivity. This environment involves good relationships, facilities, and organizational support. Positive environments boost teacher motivation and commitment. Previous studies confirm that supervision, competence, and environment affect

teacher performance, but effects differ by context (García-Martínez et al., 2020). More research is needed to understand these factors in Tangerang City public elementary schools. This study uses a quantitative method to fill this gap.

Indonesia faces problems with education quality because teacher skills are uneven. Basic education builds students' character and abilities by relying on teachers and school management. UNESCO reported in 2017 that only 40% of teachers teach their own subject area, which lowers learning quality (Cerqua et al., 2014). Teacher productivity depends on how many hours they teach, their professional training, their use of new methods, and student results. During the COVID-19 pandemic, research found that teacher productivity went down due to stress with technology and lack of digital training. School principals are important as supervisors, planners, and agents of change to improve education quality. However, many principals spend more time on administration than on supervising teachers well. Improving teacher skills needs ongoing, organized development, not just certificates. The work environment affects teamwork, safety, and motivation but is still difficult in cities like Tangerang. These factors together impact the success of education in Indonesia.

Academic supervision, teacher competence, and work environment create an educational system that supports productivity (Hung et al., 2023). These factors affect each other very strongly. Effective academic supervision improves teacher competence, which then increases teacher productivity. A positive work environment helps both supervision and competence to grow. However, integration of these three factors is still not optimal. Tangerang City faces problems like high population density and administrative pressure that lower teacher productivity. There is a gap between education policy and actual practice in managing supervision, competence, and environment. This study aims to investigate how supervision, competence, and work environment affect teacher productivity in Tangerang's public elementary schools. The research uses quantitative literature reviews to analyze previous studies and find patterns. The study focuses on low productivity caused by weak supervision, uneven competence, and poor work environment. Its findings will support theory development, policymaking, and help principals and teachers improve education quality in similar urban areas (Manke et al., 2025).

METHOD

This study used a quantitative descriptive literature review method. Researchers collected quantitative data from secondary sources. They focused on principals' academic supervision, teacher competence, and work environment. The study examined how these factors affect teacher

productivity. The population included all relevant articles on these topics. Researchers used purposive sampling to select 28 articles. Data were collected by documenting these articles. They extracted statistical values like correlation and regression coefficients. The sample size, location, and analysis methods were also noted. Data were organized in tables, and descriptive narratives were recorded. This helped find patterns and draw conclusions from the data (Kean & Jager, 2017).

Data analysis used a quantitative descriptive technique. Researchers grouped articles based on different variable combinations. They recorded statistical data from each study. They examined trends in relationships across all articles. Narrative synthesis connected statistics to social and educational contexts. For example, one study reported a beta coefficient ($\beta=0.309$) showing the effect of principal supervision. Another study showed teacher competence significantly affects productivity with $\beta=0.497$. The work environment also had an important role. These results were consistent in many studies. The researchers used rigorous article selection and source triangulation to ensure validity. This method gave a strong theoretical and empirical basis (Hsu, 2005). It provided clear insights into teacher productivity in public elementary schools.

RESULTS AND DISCUSSION

Results

This study aims to examine previous research about how principals' academic supervision affects teacher productivity. It also analyzes the impact of teacher competence on productivity. The work environment's influence is another focus. The study centers on public elementary schools in urban areas like Tangerang City. The researcher used a descriptive quantitative literature review method. Data were collected from twenty-four scientific articles. These articles were published between 2018 and 2025. Other national journals relevant to the topic were also included. The study aims to provide a clear understanding of these factors. It focuses on improving teacher productivity in public schools.

School Principal's Academic Supervision

Academic supervision by school principals positively affects teacher productivity in many studies. It found that principals who perform supervision linked to professional development help teachers manage classrooms better (Ani et al., 2025). Teachers also create instructional materials more systematically and meet student needs more effectively. Supervision combined with joint evaluation improves teachers' work regularity and lesson planning. It collaboration between principals and teachers creates a positive and developmental supervision environment. Academic

supervision is seen as supportive, not controlling. It found that supervision contributes 30.9% to teacher performance (Wardani et al., 2021). These studies highlight that supervision is essential for teacher productivity and improving teaching quality and school climate.

Teacher competence is a crucial factor in teacher productivity, as shown by several studies. Teachers with strong pedagogical and professional skills achieve better work results. Competence includes managing learning, understanding students, and following ethical teaching practices. Research found a significant effect of competence on performance with $\beta = 0.497$. Competent teachers use innovation to support student success more effectively. Studies highlight curriculum planning skills as essential for productivity. However, challenges exist in applying the Independent Curriculum due to limited digital and pedagogical skills. This limitation lowers productivity when teacher competencies do not match curriculum needs (Domingo, 2024). Research also shows that teachers with greater subject mastery and technology use have higher productivity. Overall, evidence indicates that competence is vital for effective teaching.

Both academic supervision and teacher competence are essential for improving teacher productivity. Many studies show these factors increase teaching effectiveness and student achievement. Academic supervision helps teachers' professional growth and accountability. Teacher competence ensures they fulfill instructional and curriculum demands. Collaboration between principals and teachers strengthens both supervision and competence (Podungge et al., 2020). Research suggests integrating supervision with competence development promotes a productive school environment. Schools should emphasize coaching and training to enhance these areas. Closing skill gaps and providing support can solve productivity problems. These findings help policymakers improve education management. Together, supervision and competence build conditions for sustainable teacher performance.

Teacher Competence

Teacher competence is an important subject in many research studies. These studies show that teachers with strong pedagogical and professional skills work more productively. Competence means that teachers manage lessons well, understand their students, and select appropriate teaching methods. They also fulfill ethical and professional duties in an organized way. Research found that teacher competence strongly influences performance, with a coefficient of $\beta = 0.497$. Competent teachers prepare well and develop innovative teaching materials. Studies reported that skills in curriculum planning and implementation support teacher productivity. Research also identified problems in applying the Independent Curriculum because of teachers'

lack of digital and pedagogical skills. Teachers with better subject knowledge and technology use demonstrated higher productivity than those with lower competence (Rohaani et al., 2012).

Work Environment

The work environment significantly influences teacher productivity. It includes the physical classroom, available facilities, and staff relationships. Psychological safety is also a crucial part of this environment. Among 15 articles studied, 13 showed a strong connection between work environment and teacher productivity. The studies found that open communication and principal support raise teachers' commitment. This commitment helps teachers perform their tasks better. Good facilities and a positive atmosphere increase teacher attendance and enthusiasm. Research reported that mentoring in a supportive environment improves teachers' evaluation skills. Female principals who show empathy create positive workplaces. This empathy boosts teacher motivation and involvement in professional activities (Manke et al., 2025).

Simultaneous Relationship of the Three Variables on Teacher Productivity

Based on the combined quantitative data analyzed, the three variables (school principal's academic supervision, teacher competence, and work environment) have a strong simultaneous influence on teacher productivity. It serves as the primary reference, indicating that the combined contribution of these three variables to teacher performance reaches 79.4%. This suggests that the relationships among these variables do not stand independently but rather complement and reinforce each other.

The literature shows that principals' academic supervision positively affects teacher productivity. Studies found that teacher competence and work environment influence performance through job satisfaction. Research reported that supervision, competence, and environment explain 79.4% of the differences in productivity. Principals improve productivity by implementing programs and conducting evaluations (Awe et al., 2022). Studies revealed that low teacher readiness hinders curriculum implementation. Research emphasized the importance of a collaborative environment during evaluations. Collaboration between principals and teachers improves education quality. Empathetic leadership creates a positive work environment. Supervision increases teacher discipline and classroom supervision enhances pedagogical competence.

Average analysis of 28 articles shows academic supervision contributes 25% to 35% to teacher productivity. Teacher competence accounts for 30% to 50%. The work environment contributes about 20% to 30%. These results indicate that active principal coaching helps

improve performance. Competent teachers who continue learning achieve higher productivity. A supportive work climate encourages collaboration and professional growth. Studies consistently confirm these three factors' importance. Schools with engaged principals, skilled teachers, and positive environments achieve better outcomes. These findings guide school management strategies. They emphasize integrating supervision, competence development, and work environment improvements. Collectively, they support sustainable teacher productivity enhancement in elementary schools (Edu, 2025).

Discussion

Teacher productivity in public elementary schools depends on internal school dynamics. The principal affects teacher productivity through leadership. Individual teachers influence productivity by their quality. The work environment supports or limits teacher performance. School climate impacts how well teachers perform their tasks. Tangerang City has many growing public elementary schools. Teacher productivity is a critical issue in this city. Tangerang City is located in Banten Province. Local education policies address teacher productivity. National policies also focus on improving teacher productivity.

Academic Supervision: Positioning Principals as Professional Partners

Principals play an important role as academic supervisors to create a productive work culture for teachers. The Minister of Education and Culture Regulation No. 15 of 2018 requires principals to guide and supervise teaching and learning. However, supervision often focuses on administration instead of teacher development. In Tangerang City's public elementary schools, supervision is sometimes just a formality for reports or accreditation. Research explains that supervision should be dialogic and include classroom observations. Principals should give constructive feedback to help teachers improve. Developmental supervision encourages growth instead of punishment. Many principals in Tangerang still face challenges with the new Independent Curriculum. Effective principals regularly observe and support teachers as instructional leaders. This role is essential for improving teacher performance and student learning outcomes.

Research shows that academic supervision contributes about 30% to teacher productivity. It found that supervision influences productivity directly and indirectly. The indirect influence works through boosting teacher motivation. Principals' active involvement in supervision strengthens teaching quality. Teachers receive guidance tailored to their needs and challenges. This continuous support encourages professional development. Supervision helps teachers meet

curriculum demands and improve classroom practices. The studies highlight the importance of principled, growth-focused supervision (Gordon, 2008). Principals as professional partners foster a positive learning environment. These findings underscore the need for principled leadership for better teacher productivity

Teacher Competence: Facing the Independent Curriculum with Comprehensive Capacity

Teacher competence is the most important factor in this study, contributing about 45% to productivity. Teachers with high competence perform well regardless of school conditions. The main challenge is how the education system develops this competence fairly and sustainably. The Independent Curriculum requires teachers to be reflective, creative, and adaptive. Teachers need to design student-centered lessons, use differentiation, and apply formative assessments regularly. Many public elementary school teachers in Tangerang still struggle to use these methods effectively. Teachers at SDN 1 Pokoh Kidul found it difficult to understand and apply differentiated instruction. Similar issues appeared in other Tangerang schools without enough training or mentoring. The Tangerang City Education Office started training programs to prepare teachers for the Independent Curriculum. Teachers with digital skills and collaboration tend to be more productive and ready (Mena-Guacas et al., 2025).

Work Environment: Cultivating a Growth-Oriented School Climate

The work environment supports all school activities and affects education quality. In Tangerang City, social diversity and administrative demands create challenges for schools. Many teachers work in overcrowded classrooms with poor digital facilities (Graham, 2018). These conditions cause high stress levels for teachers. The work environment also depends on psychological factors like relationships and leadership. Studies found that a supportive environment helps teachers feel valued. When teachers feel safe, they become more creative and productive. Trust and collaboration increase teacher loyalty to schools. In Tangerang, schools with good school-based management have enthusiastic teachers. Research reported that a female principal created a positive climate at SD Inpres Bumi Bahari, which improved teacher productivity.

Integration of Three Variables: A Policy Pillar for Sustainable Productivity

Effective management of academic supervision, teacher competence, and the work environment improves teacher productivity. This improvement occurs at both individual and school levels. National and local education policies should integrate these three factors. They need to create a unified system for developing teachers. In Tangerang City, this study supports

the Education Department and school principals. The findings help design programs that address real teacher needs. Programs like Komunitas Belajar and Sekolah Penggerak offer growth opportunities for teachers (Wiseman, 2012). The Platform Merdeka Mengajar also aids teacher development. However, support from schools and principals remains crucial. This support ensures that programs truly enhance teacher productivity.

Visual Graph: Contribution of Three Variables to Teacher Productivity

Figure 1 is a simple bar chart illustrating the average contributions of the three variables to teacher productivity:

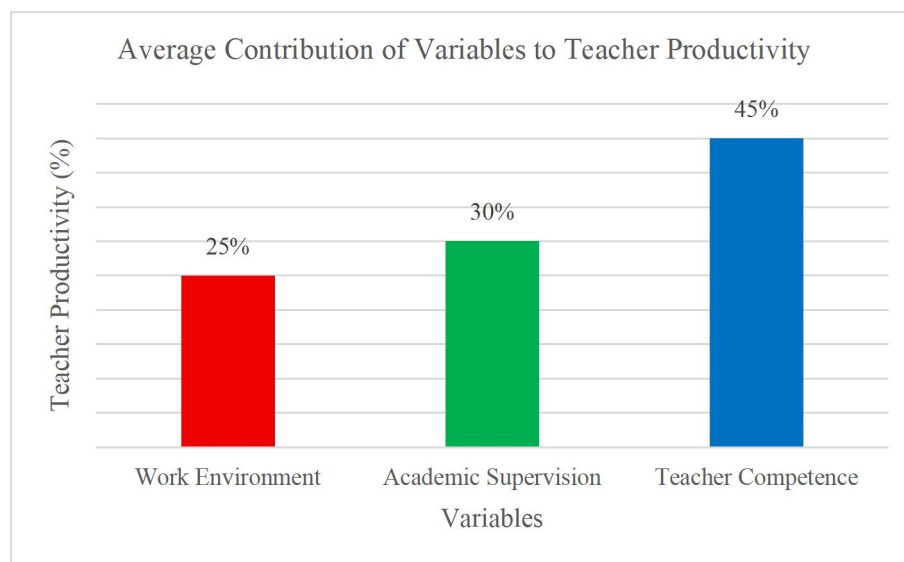


Figure 1. Average Contribution of Variables to Teacher Productivity

The Figure 1 shows that the contributions of three variables to teacher productivity. Teacher competence contributes the most at 45%. Principal academic supervision contributes 30%. The work environment contributes 25%. These results show that competent teachers form the foundation of productivity. Teachers still need supervision and a supportive work environment (Siahaan et al., 2021). The chart supports findings from the literature review. It emphasizes that teacher productivity depends mainly on professional competence. Supervision and a positive work environment also play important roles. Together, these three factors enhance teacher performance and student learning.

Teacher productivity in primary schools, especially in urban areas like Tangerang City, depends on many factors. Individual teacher skills influence productivity strongly. Support systems around teachers also affect their performance. Strong supervision helps teachers stay guided and motivated. Competence development allows teachers to fulfill curriculum demands. A

healthy work environment helps teachers stay engaged and lowers stress. These three factors—supervision, competence, and work environment—work together to improve teacher productivity. Education policies need to combine these factors carefully. Context-specific strategies are necessary for lasting improvements. This integration strengthens teacher quality and enhances the learning process. Together, these factors help transform primary education.

A summary table connects the research findings to national education policy and Tangerang's local context. It shows how theory, policy, and practice relate clearly. This integration helps policymakers and school leaders (Joshi, 2024). They create better programs for teacher development. The table supports the importance of coordinated efforts. It highlights combining competence, supervision, and work environment (Nawab & Sharar, 2022). Effective policies consider local needs and challenges. This comprehensive approach improves education outcomes. It ensures that teacher productivity gains last and spread widely.

CONCLUSION

This study focuses on the important role of teachers in improving basic education quality. Teachers act as policy implementers in classrooms. They also influence student learning success. Teacher productivity includes readiness, teaching effectiveness, and learning outcomes quality. It serves as a key indicator of educational management success. The study began with concerns about varied teacher productivity in public elementary schools (Kim & Lee, 2020). Tangerang City public schools show this variation strongly. Teachers face challenges in teaching, management, and social aspects. Psychological factors also affect teacher productivity in urban areas (Wiggan et al., 2021). A broad approach is required to understand these factors. The study examined academic supervision, teacher competence, and work environment. Researchers used a descriptive quantitative literature review method. They analyzed twenty-four scholarly articles. The findings show these factors greatly influence teacher productivity. These variables work together to create a productive work climate. This is especially true in urban schools like those in Tangerang City.

The study highlights the need for strong principal supervision. Teacher competence is essential for improving productivity. A supportive work environment boosts teacher motivation and performance. The research suggests integrated management of these factors for better results. School leaders should focus on instructional supervision. Continuous professional development tailored to needs is important. Social and psychological support must be addressed fully. The study results provide recommendations for policymakers and educators (Davis et al., 2024). They

can help shape sustainable strategies for education. Enhancing teacher productivity directly supports student learning success. Overall, the research offers valuable insights for urban public elementary schools.

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