
Strengthening teacher competence as professional educators through the implementation of student-centered learning

NENG NURHEMAH^{1*}, AND MAS FIERNA JANVIERNA LUSIE PUTRI²

Abstract

This research aimed to strengthen teacher competence as professional educators by implementing student-centered learning at SMA Negeri 3 Tangerang City. In an education that continues to develop, teachers are required not only as material deliverers but also as learning facilitators. This research used a qualitative approach with data collection techniques through observation, interviews, and documentation studies. Respondents consisted of 10 teachers and 35 students. The research results indicated that implementing student-centered learning can increase engagement and interaction in the learning process and develop critical thinking skills. Training and professional development have also been key factors in enhancing teacher competence. This research recommends that schools continue to develop ongoing training programs and implement innovative learning methods to create a conducive learning environment and support the achievement of national education goals.

Keywords

Professional educators,
student-centered learning,
teacher competence

Article History

Received 18 April 2025

Accepted 16 November 2025

How to Cite

Nurhemah, N., & Putri, M. F. J. L. (2025). Strengthening teacher competence as professional educators through the implementation of student-centered learning. *Indonesian Research Journal in Education | IRJE |*, 9(2), 1411-1426. <https://doi.org/10.22437/irje.v9i02.43198>

¹ Universitas Pamulang, Banten, Indonesia, Corresponding author: dosen02649@unpam.ac.id

² Universitas Pamulang, Banten, Indonesia

Introduction

In an era of globalization marked by rapid developments in science and technology, education is a key pillar in producing superior, competitive, and competent human resources. Education is understood not only as a process of transferring knowledge but also as a comprehensive effort to shape character, skills, and competencies relevant to the demands of the 21st century. Therefore, transformation in the education system is an unavoidable necessity. In Indonesia, these challenges are increasingly complex, coupled with dynamic curriculum policies, the need for digital literacy, and the increasingly strategic role of teachers in providing meaningful learning for students.

Teachers are key actors in the educational process. As the spearhead of curriculum implementation, teachers deliver teaching materials and are facilitators, motivators, and inspirations for students (Kagama, 2018). This aligns with Onurkan Aliusta and Özer (2017), who state that the new learning paradigm emphasizes the student-centered learning (SCL) approach, where students are positioned as active subjects directly involved in the learning process. Therefore, teachers must develop adequate professional competencies to effectively design, implement, and evaluate SCL-based learning. These professional competencies include mastery of the material, pedagogical skills, the ability to use technology, and social and emotional sensitivity in dealing with student diversity.

Although the concept of student-centered learning has been widely promoted, its implementation in the field still faces various obstacles. Many teachers continue to use a teacher-centered model, where students passively receive information from the teacher. This results in low participation, a lack of meaningful interaction, and limited development of critical thinking skills (Ghafar, 2023). Tang (2023) indicated that student engagement in learning remains relatively low due to limited teacher strategies for managing student-centered classrooms. This situation indicates a gap between the ideal concept of SCL and the learning practices in schools.

In Indonesian education, the *Merdeka Belajar* (Freedom to Learn) policy launched by the Ministry of Education, Culture, Research, and Technology provides significant opportunities for teachers to innovate more freely in learning (Sihombing et al., 2021). The *Merdeka* Curriculum emphasizes the importance of differentiation, flexibility, and strengthening student character (Fauzan et al., 2023). However, this policy also mandates that teachers prepare to develop professional competencies through training, self-development, and school support. The role of the principal as academic supervisor and learning leader is crucial in encouraging teachers to implement student-centered learning. Therefore, collaboration between teachers and principals in developing innovative learning practices is crucial for successfully implementing SCL in schools.

As one of the leading public schools in Tangerang City, SMA Negeri 3 plays a strategic role in implementing student-centered learning. The school strives to produce graduates who excel academically and possess character, creativity, and adaptability to change. However, initial observations revealed that teachers still face limitations in developing innovative learning strategies to enhance student engagement. Some teachers remain trapped in conventional learning patterns, focusing on delivering material, while collaboration, reflection,

and problem-solving are not optimally facilitated. This demonstrates the need to strengthen teachers' professional competencies as effective learning facilitators.

The urgency of this research becomes even clearer when linked to the demands of 21st-century skills, known as the 4Cs: critical thinking, creativity, collaboration, and communication. Students require mastery of academic material and life skills that will equip them to face global challenges. The implementation of SCL accommodates these needs because it encourages students to be active, reflective, and responsible for their learning process. However, the success of SCL implementation depends heavily on teacher readiness and competence. Teachers will struggle to design learning that aligns with student needs and national education goals without adequate competence.

Furthermore, digital literacy presents both a challenge and an opportunity to strengthen teacher competency. In the digital era, using technology in learning is no longer an option but a necessity. Teachers must be technologically literate and integrate technology into the learning process to support achieving student-centered learning objectives. Recent research indicates that technology can increase student motivation and engagement, provided teachers possess adequate digital pedagogical skills. Therefore, improving teacher professional competency in the digital era encompasses academic aspects and mastery of information and communication technology.

The role of the principal is also crucial in supporting the strengthening of teacher competencies. As a learning leader, the principal must create a conducive school climate, provide adequate facilities, and provide moral and professional support to teachers. Collaborative academic supervision can help teachers reflect on their learning practices and identify more effective strategies. Therefore, the successful implementation of SCL is not solely the responsibility of individual teachers but also the result of synergy between teachers, the principal, and the school environment.

Based on the description above, this research is important to analyze how strengthening teacher competency as professional educators can be realized through implementing student-centered learning at SMA Negeri 3 Tangerang City. This research is expected to provide theoretical and practical contributions. Theoretically, this research enriches the study of the relationship between teacher professional competency and the implementation of SCL. The results of this research provide input for schools in designing teacher training and development programs oriented to real needs in the field. Furthermore, this research can support the achievement of national education goals, namely, producing a globally competitive golden generation that has character and is ready to face the challenges of the 21st century.

Thus, this introduction emphasizes that strengthening teacher competency through implementing student-centered learning is a crucial strategy for improving the quality of education. The paradigm shift from teacher-centered to student-centered learning is not merely a trend but an urgent need to ensure that students receive meaningful, relevant, and transformative learning experiences. Competent teachers, supported by a visionary principal and a conducive school environment, will be able to realize learning that produces academic achievement and shapes a creative, critical, collaborative, and communicative generation.

Literature Review

Professional teachers

Teacher professionalism is one of the main foundations in efforts to improve the quality of education. Teacher professionalism is viewed from the perspective of mastering content or teaching materials but also encompasses mastery of learning strategies, classroom management, communication skills, and personality and attitudes that reflect an educator's integrity. According to Rambe (2023), teacher professional development must be directed at integrating moral, spiritual, and academic values to produce educators who are not only intellectually intelligent but also have character. This aligns with the national education paradigm that positions teachers as agents of learning and moral role models for their students.

Along with the development of digital technology, teachers must possess digital literacy skills to utilize technology-based learning media optimally. Muqowam et al. (2024) emphasized the importance of strategies for developing teacher professionalism in the digital era through training, online learning, and professional learning communities (PLCs). Their work aims to improve technological skills as well as digital pedagogical capabilities. Teacher professionalism also includes conducting classroom action research, mentoring, and developing innovative learning tools.

Johnson et al. (2012) emphasized that professional teachers must focus on learning outcomes and consider classroom conditions, including the learning atmosphere, student interactions, and a supportive learning environment. Therefore, student-centered learning is viewed as an approach that can enhance teacher professionalism. Jagtap (2016) demonstrated that this approach can increase student motivation, engagement, and a more profound understanding. In this context, teachers function as facilitators, not simply instructors.

Ahdar and Wardana (2019) emphasized that professional teacher skills encompass content mastery and the ability to adapt to student needs. By implementing student-centered learning, teachers can develop skills in classroom management, technology use, and the ability to conduct authentic assessments. Bonwell and Eison (2019) added that active learning, the core of SCL, requires teachers to continuously innovate in creating meaningful learning experiences.

Teacher professionalism is also closely linked to respect for the profession itself. Marsidin (2024) explained that professional teachers possess the skills and character necessary to enhance the dignity and prestige of the teaching profession. In other words, professional teachers can teach well and play a role in building a positive, collaborative school culture that supports student development. Udvari-Solner and Kluth (2020) emphasized the importance of active and collaborative learning strategies in creating inclusive classrooms accommodating student diversity.

Overall, teacher professionalism is a combination of skills, knowledge, attitudes, and values that shape an educator's identity. Teachers can achieve this professional development through ongoing training, self-reflection, collaboration, and support from principals and education policymakers. By embracing these challenges, teachers can effectively enhance the quality of education.

The principal's role in strengthening teachers' professional skills

The role of the principal in strengthening teachers' professional skills is vital. Principals are educational leaders who bridge centralized policies and educational practices in schools. [Abbaspour et al. \(2024\)](#) asserted that principals can enhance teachers' professional learning, even in centralized education systems, by adapting policies to local contexts and providing concrete support. In other words, despite limited latitude, the principal's instructional leadership is key to fostering teacher professionalism.

Principals are responsible for running the school administration and acting as academic supervisors. [Fujiono et al. \(2023\)](#) demonstrated that academic supervision by principals can develop teacher professionalism through guidance, reflection, and constructive feedback. Furthermore, [Wang and Zhang \(2021\)](#) emphasized that principal support for inclusive education can improve teacher skills, particularly when such support is mediated by inclusive school practices and teacher agency.

In addition to being a supervisor, the principal also plays a role in building teachers' professional capital, which includes human capital, social capital, and decision-making capital ([Wang et al., 2022](#)). Human capital encompasses teachers' knowledge and skills, social capital relates to collaborative networks between teachers and stakeholders, and decision-making capital relates to teachers' ability to make appropriate professional decisions. An effective principal can cultivate these three capitals in a balanced manner, resulting in professional and independent teachers.

In the context of leadership, [Sahlin \(2023\)](#) demonstrated that experienced principals can typically apply the learning outcomes of their leadership more effectively. This demonstrates the importance of experience and ongoing reflection for principals. A visionary principal will build a collaborative, innovative school culture that supports teacher well-being. Furthermore, principals can act as facilitators of teacher professional development through ongoing training programs, providing learning facilities and infrastructure, and creating a supportive work environment. [Siriparp et al. \(2022\)](#) emphasized that the principal's instructional leadership significantly influences teacher performance, mediated by teacher self-efficacy. In other words, principal support can increase teacher self-confidence, which ultimately impacts the quality of learning. Practices that principals can implement include building teacher learning communities, encouraging lesson study, providing regular discussion forums, and creating supportive mentoring systems. Principals must also be role models for innovation in teaching and lifelong learning. In this way, principals become administrators and true learning leaders.

Thus, the principal's role in strengthening teacher professional skills encompasses the dimensions of supervision, facilitation, motivation, and the creation of a supportive school culture. Effective principals can create an environment conducive to teacher professional development, ultimately improving teaching quality and student learning outcomes.

Student-centered learning

Student-centered learning (SCL) is a learning approach that places students at the center of the learning process. In this approach, students are actively involved in determining learning

objectives, selecting methods, and evaluating the learning process, while the teacher acts as a facilitator. Kerimbayev et al. (2023) emphasized that the SCL approach can enhance students' intrinsic motivation, collaborative skills, and reflective abilities. de Groot and Mastenbroek. (2017) added that SCL supports lifelong learning because students are accustomed to independent and reflective learning.

In their study, Finn et al. (2024) demonstrated that SCL-based learning can improve students' independent learning skills in higher education and professional settings. Woods and Copur-Gencturk (2024) found that this approach also strengthens teachers' pedagogical knowledge, as teachers must be more creative in designing learning experiences that empower students. Thus, SCL provides dual benefits for both students and teachers.

However, implementing SCL is not without challenges. Kerimbayev et al. (2023) noted that limited infrastructure, teacher readiness, and technological skills often hinder SCL implementation, especially in developing countries. Utami et al. (2023) demonstrated that strategies to increase student engagement are key to the success of SCL in Southeast Asia. Xue et al. (2024) also found that SCL-based flipped learning can significantly increase student participation. SCL provides space for developing critical thinking skills, problem-solving, and independent learning. Veluvali and Suriseti (2022) found that using machine learning in a learning management system (LMS) can help identify patterns of student engagement in SCL, allowing teachers to adjust learning strategies. Alizadeh (2024) also noted that SCL in a flipped classroom environment can increase student engagement and perceptions of learning outcomes.

In practice, implementing SCL requires teachers who are professional, flexible, and capable of integrating technology. Hamdi et al. (2024) demonstrated that measuring student engagement based on sentiment analysis can be a new instrument for evaluating the effectiveness of SCL on online platforms. With this approach, teachers can obtain more objective data on student engagement and satisfaction levels.

Methodology

Research design

This research employed a qualitative research design deemed most appropriate to explore the implementation of student-centered learning and its implications for teacher professionalism in depth. Qualitative research allows the researcher to capture the complexity of human experiences, perspectives, and interactions in natural settings (Awasthy, 2019). Unlike quantitative designs that rely heavily on numerical measurements, qualitative inquiry emphasizes meaning-making, interpretation, and context (Leavy, 2022). Through this design, the research sought to understand how teachers and students perceive, practice, and respond to student-centered learning strategies in real classroom situations. The selection of a qualitative approach was also justified by the research objective, which was not to measure the effectiveness of student-centered learning statistically, but rather to uncover the processes, challenges, and benefits experienced by participants.

Data collection techniques

The primary data collection techniques included observation, interviews, documentation, and group discussions. Classroom observation was used to obtain direct insights into student-centered learning activities. The researcher observed teacher-student interactions, instructional strategies, and classroom dynamics. Observations were conducted as a non-participant, where the researcher minimized interference, and as a participant, where engagement was needed to grasp contextual nuances fully.

In-depth interviews with teachers and students were conducted to gather rich descriptions of their experiences. Semi-structured interview guides were developed to allow flexibility, ensuring participants could freely share their perspectives while providing data relevant to the research focus. For teachers, questions revolved around their strategies, challenges, and reflections on implementing student-centered learning. For students, the interviews focused on their engagement, perceptions of teacher support, and learning experiences.

Documentation studies complemented the observations and interviews. The documents analyzed included lesson plans, student work, teacher reflective notes, and institutional guidelines related to curriculum and pedagogy. These documents served as secondary sources of data to validate and triangulate findings.

Additionally, focus group discussions (FGDs) were held with groups of teachers and students. FGDs provided a platform for participants to share ideas collectively, often sparking more dynamic insights than individual interviews alone. Group interactions enabled the emergence of shared experiences, contrasting opinions, and more profound discussions on the benefits and limitations of student-centered approaches.

Participants and sampling

The respondents were 10 teachers and 35 students, selected through purposive sampling. Purposive sampling was chosen because it ensures that participants meet specific criteria relevant to the research focus. The inclusion criteria for teachers were (1) having at least one year of experience implementing student-centered learning, (2) representing varied teaching backgrounds and years of service, and (3) willingness to engage actively in data collection. Meanwhile, students were selected based on their participation in classrooms that employed student-centered strategies and their ability to articulate experiences in interviews and group discussions. This deliberate selection allowed the research to capture diverse yet relevant perspectives that directly contributed to answering the research questions.

Data analysis

The analysis followed the steps Miles and Huberman proposed: data reduction, data display, and conclusion drawing/verification. Data reduction involved sorting, coding, and categorizing raw data from observations, interviews, documents, and group discussions. Through this process, irrelevant information was filtered out while significant themes were

highlighted. Data display was carried out using descriptive narratives, matrices, and thematic charts that made patterns and relationships more visible. Finally, conclusion drawing involved synthesizing the findings, developing interpretations, and linking them to the research objectives and theoretical framework. The process was iterative, meaning that analysis was ongoing throughout the data collection stage rather than conducted only at the end.

Trustworthiness of data

Several strategies were employed to ensure validity and reliability (or trustworthiness) in qualitative research. Triangulation was applied by comparing data from different sources (teachers, students, and documents) and methods (observation, interviews, and FGDs). Member checking was conducted by asking participants to review summaries of their statements to confirm accuracy. Peer debriefing with colleagues was also used to refine interpretations. In addition, the researcher maintained detailed field notes and an audit trail to provide transparency in the research process. These measures strengthened the findings' credibility, transferability, dependability, and confirmability.

Findings

This section presents the research findings conducted at SMA Negeri 3 Tangerang City. The findings were from observations, interviews, focus group discussions (FGDs), and documentation studies. The analysis focuses on how student-centered learning (SCL) has been implemented, the challenges encountered by teachers, and the role of the principal in strengthening teacher competence. The findings are presented thematically and supported with tables for clarity. Each theme is elaborated with detailed narratives to highlight both successes and limitations.

Teacher use of active learning

Active learning is the cornerstone of student-centered learning, where students are directly engaged in the learning process. The observations revealed that most SMA Negeri 3 Tangerang City teachers applied active learning methods, while a smaller proportion still adhered to traditional approaches. This contrast illustrates both progress and remaining gaps in the transition toward SCL.

Table 1. *The distribution of teachers using active learning*

Category	Percentage
Teachers using active learning	80%
Teachers are not using active learning	20%

As shown in Table 1, 80% of teachers reported using active learning methods. These methods included group discussions, project-based learning, cooperative learning, inquiry-based problem-solving, and digital media to stimulate student participation. Teachers who employed

these strategies observed increased student engagement, improved critical thinking skills, and stronger student collaboration.

However, 20% of teachers were still bound to traditional teacher-centered practices, such as lectures and note-taking. The reasons behind this resistance included a lack of confidence in handling large classes, limited training, and a perception that lecture-based methods make covering content quickly easier. This suggests that, while most teachers are shifting toward active learning, ongoing mentoring and support are necessary for the remaining teachers to adopt more interactive approaches.

Implementation of self- and peer assessment

Self- and peer assessment are essential features of SCL because they foster student autonomy, responsibility, and reflective learning. These strategies also help students develop evaluation skills and a sense of ownership over their learning outcomes. The findings showed a mixed picture of implementation levels, as illustrated in Table 2.

Table 2. *The implementation of self and peer assessment*

Categories	Percentage
Teachers implementing self- and peer assessment	40%
Teachers are facing challenges (time, readiness, and administrative tasks)	20%
Teachers are not yet implementing self- and peer-assessment	40%

As seen in Table 2, 40% of teachers successfully incorporated self- and peer-assessment practices into their teaching. These teachers reported that students became more motivated to reflect on their progress and valued the opportunity to learn from their peers' feedback. For example, students involved in group projects frequently assessed their contribution and their teammates', which fostered accountability and collaboration.

Meanwhile, 20% of teachers attempted to implement these assessments but faced practical challenges. The obstacles included insufficient class time, administrative workload, and varying student readiness levels to evaluate objectively. Teachers indicated that students sometimes struggled with fairness, giving overly positive or negative feedback.

The remaining 40% had not yet implemented self- and peer assessment. Reasons included a lack of training in designing rubrics, hesitation in transferring evaluation authority to students, and concerns over maintaining grading reliability. This research indicates a significant need for professional development and institutional support to build teacher confidence in facilitating student-driven assessment.

The role of the principal in strengthening teacher competence

The principal at SMA Negeri 3 Tangerang City played a pivotal role in creating a supportive climate for teacher professional growth. Through regular supervision, mentoring,

and the provision of resources, the principal helped teachers shift from teacher-centered practices to more student-centered strategies gradually.

Table 3. *The evaluation of the principal's contributions*

Criteria	Evaluation
Helps teachers develop new approaches	Good
Provides space for alternative evaluation methods	Good
Gives freedom in designing assessment instruments	Good
Acts as a learning leader in strengthening teacher competence	Very Good
Serves as a facilitator of professional development	Very Good

The evaluation results show that the principal's performance ranged from 'Good' to 'Very Good.' Teachers acknowledged that the principal encouraged experimentation with new strategies, provided constructive feedback, and created spaces for collaborative discussions. Decisive was the principal's role as a learning leader and facilitator of professional development, where teachers benefited from workshops, peer learning communities, and access to professional resources.

Moreover, teachers reported that the principal acted as a role model in innovation, demonstrating the importance of lifelong learning. This leadership style inspired teachers to continue refining their practice and to adopt a growth mindset. The principal's support also helped reduce teacher anxiety when facing challenges, fostering a school culture that values risk-taking and innovation.

Teacher roles in implementing SCL

Teachers are the primary agents of SCL implementation. The research explored how teachers integrated active learning, empowered students, and managed classroom challenges.

Table 4. *Presents the teacher roles and frequency of implementation*

Teacher Role	Number of Teachers
Active learning methods in class	8
Implementation of approaches that empower students	6
Facilitation of self- and peer-assessment	4
Facing obstacles in implementing SCL	2
Not using SCL	2

As Table 4 demonstrates, eight teachers consistently applied active learning strategies, such as debates, case studies, and collaborative problem-solving. Six teachers emphasized approaches that empowered students, giving them a stronger voice in determining learning activities. Four teachers facilitated self- and peer assessment, though this practice remained limited compared to other strategies.

Two teachers reported facing substantial challenges in implementing SCL. Their concerns included student disengagement, difficulty managing time, and a lack of

technological tools. Additionally, two teachers admitted that they had not attempted SCL, relying instead on conventional methods. This uneven adoption highlights the importance of sustained professional development and peer mentoring to ensure classroom consistency.

In summary, the findings demonstrate that student-centered learning has positively strengthened teacher competence at SMA Negeri 3 Tangerang City. Teachers have increasingly adopted active learning and assessment practices, though implementation remains uneven. The principal's leadership has fostered a professional culture encouraging innovation and growth.

The implications of these findings are significant. Schools should invest in continuous professional development tailored to the specific needs of teachers. Peer collaboration and mentoring can address challenges in assessment and classroom management. Furthermore, school leaders must continue to play a role as facilitators and motivators to ensure that SCL becomes fully institutionalized. The transition to SCL can enhance teacher competence and student outcomes with consistent efforts, ultimately supporting national education goals.

Discussion

The findings of this research demonstrate that strengthening teacher competence through the implementation of student-centered learning (SCL) has important implications for the quality of education at SMA Negeri 3 Tangerang City. The data obtained through observations, interviews, and documentation show that the principal and teachers play equally important roles in creating a conducive environment for the implementation of SCL. This discussion will elaborate on three significant aspects: (1) the role of the principal in strengthening teacher professional competence, (2) the role of teachers in implementing SCL, and (3) challenges and opportunities in developing teacher professionalism within the framework of 21st-century education.

The principal's role in strengthening teacher professional competence

The findings indicate that the principal has performed well in supporting teacher professional development. Specifically, the principal is responsible for administrative supervision and acts as a learning leader, facilitating teacher growth. This aligns with [Abbaspour et al. \(2024\)](#), who argued that principals bridge national policy and school practice, making their leadership pivotal in adapting educational policies to the realities of classrooms.

The observation results revealed that principals at SMA Negeri 3 Tangerang City provide space for teachers to design alternative evaluation methods and empower them to create assessment instruments suited to student characteristics. This role reflects what [Fujiono et al. \(2023\)](#) highlighted as academic supervision, which fosters reflective teaching practices and improves teacher performance through constructive feedback.

Moreover, the principal's efforts to promote collaboration and mentoring resonate with [Wang et al. \(2022\)](#)'s concept of building professional capital—human capital, social capital, and decision-making capital. By encouraging collaboration, principals strengthen teachers' social capital, while providing professional autonomy strengthens decision-making capital.

This synergistic leadership ultimately produces more professional, confident, and innovative teachers.

The findings show that principals must serve not only as supervisors but also as role models. Sahlin (2023) demonstrated that principals with reflective leadership can foster a culture of innovation. Similarly, this research suggests that when principals actively engage in lifelong learning and encourage teacher training, they indirectly set an example that motivates teachers to improve their practice continuously.

In the broader educational context, the role of the principal in this research reinforces the national *Merdeka Belajar* policy, which emphasizes school-based innovation and differentiation (Sihombing et al., 2021). Without strong principal leadership, teachers may struggle to navigate the freedom and responsibility embedded in this policy. Thus, the findings highlight that effective instructional leadership is supportive and transformative—it equips teachers to embrace change, adopt SCL strategies, and foster meaningful student learning.

Teachers' professional competence in implementing SCL

The findings reveal that most teachers (80%) at SMA Negeri 3 Tangerang City have adopted active classroom learning methods. This result confirms Jagtap's (2016) assertion that SCL can improve student engagement and motivation when teachers shift from instructors to facilitators. However, the data also suggest that some teachers still face difficulties applying peer- and self-assessment strategies, with only 40% actively using them.

This partial implementation reflects the challenges documented by Ghafar (2023) and Tang (2023), who found that teachers often struggle to translate the ideal of SCL into practice, resulting in low student participation and limited development of critical thinking. In the case of SMA Negeri 3, barriers such as time limitations, administrative workloads, and student readiness reduce the consistency of SCL applications.

Nevertheless, the findings underscore that teachers who successfully implement SCL demonstrate strong professional competence. They can design lessons integrating critical thinking, collaboration, creativity, and communication—the so-called 4Cs of 21st century skills. These teachers demonstrate a mastery of subject matter and the ability to effectively manage diverse student needs, apply authentic assessments, and integrate technology.

An important finding is the increasing role of digital literacy in shaping teacher professionalism. Teachers who integrate digital platforms into their classrooms create more engaging and participatory learning environments. This echoes the emphasis by Muqowwam et al. (2024) that professional development in the digital era must include digital pedagogy. Thus, teachers at SMA Negeri 3 who combined technology with SCL were more successful in stimulating student motivation and active learning.

Furthermore, professional competence in SCL involves self-reflection and collaboration. Teachers who participated in professional learning communities or engaged in peer reflection were more likely to overcome barriers and sustain innovative practices. This finding supports Udvari-Solner and Kluth (2020), who highlighted the role of collaborative learning strategies in creating inclusive classrooms.

Challenges and opportunities in strengthening teacher professionalism

While the findings show positive progress, several challenges hinder the full implementation of SCL at SMA Negeri 3 Tangerang City. These include:

- Time constraints—Teachers reported difficulty in conducting student-centered activities within the limited duration of lessons. This issue is consistent with [Tang's \(2023\)](#) findings that classroom time often limits student engagement strategies.
- Administrative workload—Teachers' responsibilities in administrative tasks reduced the time available for lesson planning and reflection.
- Student readiness—Some students were not accustomed to active participation, making it harder for teachers to foster peer- and self-assessment.
- Resource limitations—Although some digital tools were used, not all teachers had access to adequate training or technological infrastructure.

Despite these challenges, the research identifies several opportunities for improving teacher competence:

- Professional development programs: Teachers need continuous training, especially in digital pedagogy and innovative assessment. This aligns with [Rambe \(2023\)](#), who argues that teacher professional development must integrate moral, spiritual, and academic dimensions.
- Collaborative culture: Teachers benefited from peer learning and mentoring programs facilitated by the principal. Lesson study and professional learning communities (PLCs) can further enhance collective teacher competence ([Muqowwam et al., 2024](#)).
- Policy support: The *Merdeka Belajar* policy provides a framework for schools to innovate more freely. Combined with strong principal leadership, it creates fertile ground for SCL implementation.
- Digital transformation: As [Kerimbayev et al. \(2023\)](#) and [Hamdi et al. \(2024\)](#) suggested, digital tools can expand opportunities for SCL by providing platforms for interactive and reflective learning. Teachers who embrace technology will be better able to engage students and collect meaningful feedback.

The research findings carry several practical implications. First, principals must prioritize teacher professional development through sustained, need-based training. This should include workshops on digital pedagogy, authentic assessment, and classroom management for SCL. Second, schools should institutionalize professional learning communities where teachers can share strategies, reflect on practices, and support one another. Third, we must address workload management by reducing unnecessary administrative burdens, enabling teachers to concentrate on teaching and reflection. Finally, schools must invest in technological infrastructure and provide equitable access to training so that all teachers can integrate technology effectively.

At the national level, the research highlights the importance of aligning teacher competency development with the broader goals of *Merdeka Belajar*. Policies should grant freedom to innovate and provide systemic support through resources, professional networks, and accountability mechanisms.

Conclusion

This research concludes that strengthening teacher competence as professional educators is inseparable from implementing student-centered learning. The SMA Negeri 3 Tangerang City findings demonstrate that principals are pivotal in guiding, mentoring, and providing teacher resources. In contrast, teachers who adopt SCL develop higher levels of professionalism through creativity, flexibility, and technological integration. Although challenges such as time constraints, administrative workload, and student readiness persist, growth opportunities are significant, particularly through professional development, collaborative culture, and digital transformation.

Theoretically, this research contributes to the understanding that teacher professionalism and SCL are mutually reinforcing—competent teachers are more capable of implementing SCL, and the practice of SCL further enhances teacher professionalism. The research recommends that schools prioritize ongoing training, foster professional learning communities, and ensure strong principal leadership to sustain innovation. Systemic support should accompany *Merdeka Belajar* at the policy level to maximize its potential impact.

Ultimately, strengthening teacher competence through SCL is a strategy to improve classroom practices and a crucial step toward achieving Indonesia's national education goals—producing a golden generation that is critical, creative, collaborative, and communicative in facing 21st century challenges.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Acknowledgments

Thanks to the Sasmita Jaya Foundation, Universitas Pamulang, which has provided moral and material support to researchers.

References

- Abbaspour, F., Hosseingholizadeh, R., & Bellibaş, M.Ş. (2024). Uncovering the role of principals in enhancing teacher professional learning in a centralized education system. *International Journal of Educational Management*, 38(3), 873-889.
- Ahdar, A., & Wardana, W. (2019). *Belajar dan pembelajaran: 4 pilar peningkatan kompetensi pedagogis (Learning and teaching: 4 pillars of improving pedagogical competence)*. Kaaffah Learning Center.
- Alizadeh, M. (2024). Exploring engagement and perceived learning outcomes in an immersive flipped learning context. *International Journal of Information Technology in Governance, Education and Business*, 6(2), 1–14.
- Awasthy, R. (2019). *Nature of qualitative research*. Emerald Publishing Limited.
- Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom*. ASHE-ERIC Higher Education Reports.

- de Groot, E., & Mastenbroek, N. J. J. M. (2017). Lifelong Learning, and Reflective Practice. *Veterinary Medical Education: A Practical Guide*, 433-447.
- Fauzan, F., Ansori, R. A. M., Dannur, M., Pratama, A., & Hairit, A. (2023). Implementing the Merdeka curriculum (independent curriculum) strengthens students' character in Indonesia. *Aqlamuna: Journal of Educational Studies*, 1(1), 136-155.
- Finn, A., Fitzgibbon, C., Fonda, N., & Gosling, C. M. (2024). Self-directed learning and the student learning experience in undergraduate clinical science programs: A scoping review. *Advances in Health Sciences Education*, 30(3), 973-1005.
- Fujiono, F., Hanayanti, C. S., Suwarna, A. I., Rais, R., & Ridani, A. (2023). Developing teacher professionalism through academic supervision activities of the school principal. *Journal on Education*, 5(4), 14881-14885.
- Ghafar, Z. N. (2023). The teacher-centered and the student-centered: A comparison of two approaches. *International Journal of Arts and Humanities*, 1(1), 18-23.
- Hamdi, A., Mazrou, A. A., & Shaltout, M. (2024). *LLM-Sem: A sentiment-based student engagement metric using LLMs for e-learning platforms*. Springer Nature Switzerland.
- Jagtap, P. (2016). Teachers role as facilitator in learning. *Scholarly Research Journal*, 3(17), 3903-3905.
- Johnson, S. M., Kraft, M. A., & Papay, J. P. (2012). How context matters in high-need schools: The effects of teachers' working conditions on their professional satisfaction and their students' achievement. *Teachers College Record*, 114(10), 1-39.
- Kagama, J. (2018). The school curriculum and its influence on teacher motivation in curriculum implementation in Kenya. *Journal of Culture and Values in Education*, 1(1), 9-25.
- Kerimbayev, N., Umirzakova, Z., Jotsov, V., & Shadiev, R. (2023). A student-centered approach using modern technologies in distance learning: A systematic review of the literature. *Smart Learning Environments*, 10(1), 61-70.
- Leavy, P. (2022). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. Guilford Publications.
- Marsidin, S. (2024). The influence of managerial competence and supervision on school principals and teacher professionalism. *Indonesian Research Journal in Education (IRJE)*, 8(2), 962-976.
- Muqowwam, A., Abdullah, M. G. B., Hadiwijaya, M., & Lestari, H. D. (2024). Teacher professionalism development strategy in the digital era: Challenges and opportunities. *Seroja: Journal of Education*, 3(2), 162-167.
- Onurkan Aliusta, G., & Özer, B. (2017). Student-centered learning (SCL): Roles changed?. *Teachers and Teaching*, 23(4), 422-435.
- Rambe, P. (2023). Development of teacher professionalism through the integration of Islamic values in education: A literature review. *Tarbiyah Suska Conference Series*, 2(1), 161-169.
- Sahlin, S. (2023). Professional development of school principals – how do experienced school leaders make sense of their professional learning? *Educational Management Administration & Leadership*, 51(3), 1-18.
- Sihombing, A. A., Anugrah Sari, S., Parlina, N., & Kusumastuti, Y. S. (2021). "Merdeka Belajar" in an online learning during the COVID-19 outbreak: Concept and implementation. *Asian Journal of University Education*, 17(4), 35-45.

- Siriparp, T., Buasuwan, P., & Nanthachai, S. (2022). The effects of principal instructional leadership, collective teacher efficacy and teacher role on teacher self-efficacy: A moderated mediation examination. *Kasetsart Journal of Social Sciences*, 43(2), 353-360.
- Tang, K. H. D. (2023). Student-centered approach in teaching and learning: What does it really mean?. *Acta Pedagogia Asiana*, 2(2), 72-83.
- Udvari-Solner, A., & Kluth, P. (2017). *Joyful learning: Active and collaborative strategies for inclusive classrooms*. Corwin Press.
- Utami, B. D., Kurniawati, F., & Rifameutia, T. (2023). Student engagement among undergraduate students in Southeast Asia: Systematic literature review. *Journal of Innovation in Educational and Cultural Research*, 4(4), 602–615.
- Veluvali, P., & Surisetti, J. (2022). Learning management system for greater learner engagement in higher education—A review. *Higher Education for the Future*, 9(1), 107-121.
- Wang, Y., & Zhang, W. (2021). The effects of principal support on teachers' professional skills: The mediating role of school-wide inclusive practices and teacher agency. *International Journal of Disability, Development and Education*, 68(6), 773-787.
- Wang, K. C., Huang, W. Y., & Wu, C. E. (2022). A study on the relationship between the principals' change leadership and construction of teachers' professional capital. *International Journal of Arts, Humanities and Social Science*, 3(3), 53-63.
- Woods, P. J., & Copur-Gencturk, Y. (2024). Examining the role of student-centered versus teacher-centered pedagogical approaches to self-directed learning through teaching. *Teaching and Teacher Education*, 138, 10-24.
- Xue, L., Alias, B. S., & Abdul Wahab, J. L. (2024). A bibliometric of student engagement in flipped learning: current situation and way forward. *International Journal of Learning, Teaching and Educational Research*, 23(6), 233–266.
-

Biographical Notes

NENG NURHEMAH is a lecturer at Universitas Pamulang, Banten, Indonesia.

MAS FIERNA JANVIERNA LUSIE PUTRI is a lecturer at Universitas Pamulang, Banten, Indonesia.