

A Correlational Study: Pedagogical and professional competence of physical education teachers in relation to the implementation of the Merdeka curriculum

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Abstract:

The Merdeka Curriculum aims to rejuvenate the education system, focusing on the character development of learners through the Pancasila profile and mastery of basic competencies to achieve 21st-century skills. However, the implementation of the Merdeka Curriculum in Physical Education (PE) subjects remains relatively low, leading to the assumption that the competence of teachers plays a less significant role, particularly in pedagogical and professional competence. This study aims to explore the relationship between the independent variables (pedagogical and professional competence) and the dependent variable (implementation of the Merdeka Curriculum). This correlational study employed a quantitative approach, focusing on the physical education teachers. The sample of this study were 30 teachers selected through purposive sampling in schools that have implemented the Merdeka Curriculum. They were then administered a validated questionnaire. The data were collected through research instruments were analyzed using correlation and regression methods with SPSS 25. The results indicate several crucial points, revealing a positive and strong correlation between pedagogical and professional competence and the implementation of the Merdeka Curriculum. The significant values, $0.002 < 0.554$ and $0.002 < 0.541$, demonstrated a strong positive correlation between the variables. Therefore, it can be concluded that there is a meaningful correlation between pedagogical and professional competence and the implementation of the Merdeka Curriculum. Hence, it is essential for relevant authorities to consider both factors. Enhancing the pedagogical and professional competence of teachers is crucial for the successful implementation of the Merdeka Curriculum. It is recommended that educational authorities and related institutions focus on strengthening these competencies among teachers. By addressing these aspects, curriculum implementation can be improved, providing a better educational experience with significant meaning for learners.

Keywords: Pedagogical Competence, Professional Competence, Merdeka Curriculum, Physical Education

Introduction

Education holds intrinsic value, capable of influencing an individual's life and collective dynamics, consciously pursued to transform into a better human being (Hastuti et al., 2021; Umar, 2023). Within the realm of education, the focus extends beyond merely shaping characteristics; it significantly influences the intellectual development of the nation's children, fostering improved qualities of character and personality (Maisyaroh et al., 2023). Every formal school is obligated to impart Physical Education (PE) (Umar et al., 2023; Zhou & Wang, 2019). Playing a crucial role in the development of learners, PE play a pivotal role in preparing students for real-life challenges in society. PESH can be likened to a microcosm of life, instilling values such as honesty, social responsibility, discipline, resilience, sportsmanship, teamwork, and many others. Thus, the teacher's role in education is paramount, given their significant influence on students in achieving educational and learning objectives (Asari et al., 2018). Teachers hold the position of professional educators across all levels of education, from early childhood to elementary and secondary education (Yusnita et al., 2018). In the process of learning, a teacher must possess various competencies, including pedagogical, personal, social, and professional competencies (Republik Indonesia, 2005).

These competencies refer to the skills required by a teacher to achieve the goals of learning and education (Ahmad & Setyaningsih, 2012). Competence is also related to standards, indicating that someone is considered proficient in their field if their knowledge, skills, attitude, and work outcomes align with the standards set by institutions or the government (Hubers et al., 2022). The evaluation of educational quality can be conducted through the assessment of teachers' performance and expertise as learning facilitators (Firdaus et al., 2023). Teachers play a central role in the success of education, as they are professionally responsible for guiding learners in the process of learning and growth. They contribute to the development of the intellectual, personal, and social aspects of individuals engaged in the education system (Agus et al., 2016). Hence, PE teachers are not merely tasked with providing sports practice but must also possess the ability to master teaching materials, apply instructional concepts, and deliver content in a manner comprehensible to students. The goal of

this approach is to enable students to effectively comprehend the conveyed information. Thus, the learning process can proceed smoothly, successfully achieving both learning objectives and broader educational goals.

There are four skills that a teacher must possess: teaching skills (pedagogical competence), professional skills, social skills, and personality skills. However, this research focused only on two skills, namely teaching skills (pedagogical competence) and professional skills. Teaching skills refer to the teacher's ability to manage the learning process, including lesson preparation reflected through mastery of knowledge and teaching skills (Asrial et al., 2019). Teachers are expected to have a profound understanding of students and the ability to plan, implement, and assess the learning process (Busse et al., 2014). Hence, pedagogy becomes a primary component that has a significant impact on enhancing the quality of learning (Diana, 2017). The most effective teachers, capable of creating a conducive learning environment, are those with a profound understanding of the subject matter. They can develop teaching methods aligned with the content, comprehend students' thought processes regarding the material, conduct evaluations, and even identify various challenges that may arise as students learn new material (Amin et al., 2020). A teacher should be well-versed in effective and engaging teaching methods, ensuring that students feel motivated and interested in participating in PE (Jihaduddin et al., 2020). This involves the utilization of various media, teaching aids, and diverse learning strategies to ensure that students are actively engaged and interested in the learning process (Lanos et al., 2023; Umar & Mardesia, 2023). Therefore, a teacher's performance will be excellent when supported by adequate pedagogical and professional competencies (Asbari et al., 2019). Professional competence encompasses a profound and comprehensive understanding of the learning material. This includes an understanding of the concepts, structures, and scientific, technological, or artistic methods relevant to the subject matter. Furthermore, it involves knowledge of the school curriculum, the relationships between concepts in related subjects, the ability to apply scientific concepts in daily life, and the skill to operate professionally on a global scale while still respecting national values and culture (*Depdiknas*, 2004). An educator or teacher must possess high academic qualifications and competence while maintaining physical and mental health. They are also expected to have the ability to achieve national educational goals. These requirements include holding a minimum of a four-year diploma (D-IV) or bachelor degree (S1), having a relevant educational background in the field or subject being taught, and obtaining a professional teacher certification with a minimum accumulation of 36 credit hours above the D-IV/S1 level (Asrial et al., 2019). Professional competence refers to a teacher's ability to comprehend and master the subjects related to the fields of science, technology, or art that they teach. This encompasses a mastery of subject matter in accordance with the content standards of educational programs and subjects, as well as a profound understanding of the concepts and methods within the sciences they instruct (Ubaidillah Al Ghifary Slamet et al., 2020). Hence, teachers must possess consistent and relevant knowledge aligned with the educational curriculum they follow. Supported by statistical data from the Human Development Index (HDI), approximately 17.2%, or a total of 69,477 teachers, do not teach in their field of expertise (Hesti, 2018; Sobandi, 2010).

High-quality human resources stem from a well-designed curriculum, earning it the moniker of the heart of an educational institution. The curriculum plays a crucial role in shaping the character of the nation's generation, ensuring that they possess traits of responsibility, creativity, and innovation (Purnomo et al., 2023). The Ministry of Education, Culture, Research, and Technology (*Kemendikbudristek*) has introduced a new curriculum in emergency situations called the "Merdeka Belajar" curriculum. This curriculum aims to revitalize the education system with a focus on the character development of students through the values of the Pancasila profile and the mastery of basic competencies to achieve 21st-century skills (Machfud, 2022; Maipita et al., 2021). Schools are granted the freedom to adapt this curriculum according to the capabilities and needs of the students (Neina & Qomariyah, 2021; Sihombing et al., 2021). The Indonesian government advocates the concept of 'Merdeka' as a step to facilitate students' independence in thinking creatively, critically, and collaboratively (Yulianto, 2022). Differing from the previous curriculum, namely the 2013 curriculum, the Merdeka curriculum strives to distill meaningful contexts that introduce local wisdom, ideology, democracy, innovation, and entrepreneurial spirit to strengthen competencies tailored to the 21st century (Tjaija, 2022). Based on the author's field observations, there are PE teachers in Padang city who have yet to effectively leverage technology in their teaching. In addition, some PE teachers still instruct in fields unrelated to their expertise. Consequently, it is not surprising that educational achievement data in Indonesia show limited progress from year to year. Thus, the Ministry of Education, Culture, Research, and Technology has initiated one of its latest programs, the New Model Teacher Professional Education Preliminary Program, which has been underway for the past year. This program opens to recent graduates or individuals not yet registered in the Basic Education Data (Hibatullah et al., 2023; Sudrajat et al., 2023). Fundamentally, this program aims to enhance the quality, competence, and professionalism of teachers by providing an educator certificate for those who successfully complete the program (Hutasoit & Purwasih, 2022). However, for teachers already registered in the Basic Education Data, they are ineligible to apply for this program. As a result, these teachers must opt for the In-Position Teacher Professional Education Program, which may involve waiting or queuing for years before being able to participate. Consequently, there is still a prevalence of PE teachers who have not met the required competency standards in delivering instruction. Therefore, further research is warranted concerning issues related to pedagogical and professional competence among PE teachers in implementing the Merdeka Curriculum in Junior High Schools in the city of Padang.

Material & methods

A total of 30 PE teachers teaching at the State Junior High Schools in Padang, who have implemented the Merdeka Curriculum, participated in this research. This study falls under the category of quantitative research utilizing a correlational survey approach. The correlation approach was employed to identify relationships among the variables involved (Sugiyono, 2015). This research adopted a quantitative descriptive approach with the aim of extracting information regarding the relationship between the pedagogical and professional competence of PE teachers and the Implementation of the Merdeka Curriculum. The study utilized a questionnaire as its instrument. Subsequently, the data analysis was conducted by using the Pearson correlation and regression tests to determine the relationship between pedagogical and professional competencies and the implementation of the Merdeka Curriculum. Furthermore, to ascertain these relationships, the research undergoes stages of normality testing, linearity testing, and correlation testing using SPSS version 25.

Results

Descriptive percentage analysis regarding pedagogical, professional competence, and the implementation of the Merdeka Curriculum among PE teachers in Padang, obtained from questionnaire responses, yields results as shown in the table below:

Table 1. General description of respondents' answers

No	Score	Pedagogical Competence	Professional Competence	Implementation Merdeka Curriculum	Information
1	>120	3%	0%	0%	A
2	109 – 119	13%	13%	13%	B
3	98 - 108	37%	13%	13%	C
4	87 - 97	33%	43%	73%	D
5	< 86	13%	30%	0%	E
Amount		100 %	100 %	100 %	

In Table 1, the results indicated that in pedagogical competence, the dominant value falls within the 'Moderate' (C) category with a percentage of 37%, followed by the 'Insufficient' (D) category with a percentage of 33%. Subsequently, the 'Good' (B) and 'Very Insufficient' (E) categories were in the same percentage of 13%, while the 'Excellent' (A) category had a percentage of 3%. Moving on to professional competence, it tends to be in the 'Insufficient' (D) category with a percentage of 43%. Similarly, the Implementation of the Merdeka Curriculum tends to be in the 'Insufficient' (D) category with a percentage of 73%. These results become the focus of further investigation to determine if there is a significant correlation between teacher competencies and the implementation of the Merdeka Curriculum.

Table 2. Normality Test

	Kolmogorv-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pedagogical Competence	0.101	30	.200*	0.983	30	0.899
Professional Competence	0.092	30	.200*	0.958	30	0.275
Implementation Merdeka Curriculum	0.125	30	.200*	0.949	30	0.161

The normality test conducted yielded significant results for pedagogical competence with a value of $0.899 > 0.05$, professional competence $0.275 > 0.05$, and the implementation of the Merdeka Curriculum $0.161 > 0.05$. Thus, it can be stated that the data are normally distributed and suitable for further testing. The results can be seen in Table 2.

Table 3. Linearity Test

ANOVA Table							
			Sum of Squares	df	MeanSquare	F	Sig.
Pedagogical Competence * Implementation Merdeka Curriculum	Between Groups	Deviation form Linearity	2379.091	20	118.955	1.333	0.351
Professional Competence * Implementation Merdeka Curriculum	Between Groups	Deviation form Linearity	2354.820	20	117.741	1.173	0.430

The Linearity Test conducted between pedagogical competence and the Implementation of the Merdeka Curriculum showed a significant value of $0.351 > 0.05$. Similarly, between professional competence and the Implementation of the Merdeka Curriculum, the significant value was $0.430 > 0.05$. Thus, based on these results, it can be concluded that the data is linear, as illustrated in Table 3.

Table 4. Correlation Test

		Pedagogical Competence	Professional Competence	Implementation Merdeka Curriculum
Pedagogical Competence	Koefisien	1	0,554**	0,554**
	Korelasi			
	Sig. (2-tailed)		0,002	0,002
	N		30	
Professional Competence	Koefisien	0,554**	1	0,541**
	Korelasi			
	Sig. (2-tailed)	0,002		0,002
	N		30	
Implementation Merdeka Curriculum	Koefisien	0,554**	0,541**	1
	Korelasi			
	Sig. (2-tailed)	0,002	0,002	
	N		30	

The correlation test was conducted to determine the relationship among 30 PE teachers regarding teacher qualifications in the pedagogical competence, professional competence, and implementation of the Merdeka Curriculum is presented in Table 4. It was found that there was a positive and strong correlation between pedagogical and professional competence with the implementation of the Merdeka Curriculum. The significant values of $0.002 < 0.554$ and $0.002 < 0.541$ indicated a positive and strong correlation between the variables. Therefore, it can be concluded that there is a significant relationship between pedagogical and professional competence with the implementation of the Merdeka Curriculum. This finding is documented in Table 4.

Dicussion

This research primary aims to explore the correlation between teaching abilities, particularly pedagogical and professional competencies, and mplementation of the Merdeka Curriculum in the Physical Education (PE) subject in Padang. This study involved 30 PE teachers in Padang, utilizing a quantitative correlational approach to analyze the relationship between these variables. The research findings revealed a significant correlation between pedagogical and professional competencies and successful implementation of the Merdeka Curriculum in PE. Statistical analysis, conducted through Pearson correlation tests, indicated a strong and positive correlation, as evidenced by the significant values of 0.002 for both pedagogical and professional competencies. This suggests that teachers with higher levels of pedagogical and professional competencies are more likely to successfully implement the Merdeka Curriculum in PE. These findings have important implications for the education system, particularly within the context of the Merdeka Curriculum. The positive correlation underscored the key role of teacher competencies in shaping the success of curriculum implementation. It highlights the importance of investing in the enhancement of pedagogical and professional skills among PE teachers to ensure a meaningful and effective educational experience for students. The correlation between teacher competencies and curriculum implementation aligns with existing literature emphasizing the crucial role of educators in shaping the learning process. This emphasizes the need for further research and ongoing efforts to enhance teacher competencies for the successful implementation of innovative curricula. Based on the previous research (Ahyanuardi, 2019; Bahari et al., 2021; Sucuoglu & Atamturk, 2020) consistently, this study has underscored the impact of teacher competencies on the success of the learning process. This research further strengthened and expanded upon these findings, particularly in the context of the Merdeka Curriculum in Physical Education (PE).

The observed positive correlation in this study underscored the necessity for educational authorities to prioritize the enhancement of pedagogical and professional competencies among PE teachers. Investing in teacher training programs, professional development initiatives, and ongoing support can contribute to the success of implementing the Merdeka Curriculum. Addressing these competencies can lead to a more dynamic and engaging PE curriculum, aligning with the goals of character development and 21st-century skills. While the research highlights the importance of teacher competencies, it also sheds light on existing challenges. The descriptive analysis of teacher competencies revealed the areas of moderate and insufficient competence, indicating potential areas for improvement. This emphasizes the need for targeted interventions and support mechanisms to address specific challenges faced by PE teachers in Padang.

Based on the research findings, it is recommended that educational authorities and relevant institutions focus on designing and implementing targeted programs to strengthen pedagogical and professional competencies among PE teachers. This may include workshops, mentoring programs, and resources aimed at equipping teachers with the skills and knowledge necessary to excel in their roles, ultimately producing competent educators (Valério et al., 2021). The research notes observations regarding the limited use of technology by some PE teachers in Padang. In addition, integrating technology into PE teaching methods can enhance engagement and create a more interactive learning experience, especially in efforts to improve Health Education knowledge (Momot et al., 2021). A research conducted by Mukan et al. (2021) suggests that future initiatives may explore strategies to encourage and support PE teachers in leveraging technology to enrich the educational process. Aligned with the Merdeka Curriculum, which provides flexibility for adaptation in tailored learning processes according to the needs of learners, future efforts should also focus on providing guidance and resources to assist teachers in customizing the curriculum based on their students' needs and abilities. Clear guidelines and support mechanisms can empower teachers to make effective and meaningful adaptations to the curriculum.

Conclusions

This research yields significant findings indicating a strong positive correlation between the pedagogical and professional competencies of Physical Education (PE) teachers and the implementation of the Merdeka Curriculum. Statistical analysis results indicate that teachers with higher levels of competence are more likely to succeed in implementing the Merdeka Curriculum in the PE subject. This finding contributes theoretically by emphasizing the crucial role of teacher competencies in the success of curriculum implementation, particularly in the context of the Merdeka Curriculum that emphasizes character development and 21st-century skills. Practically, this research provides valuable insights to educational authorities and relevant institutions to prioritize the enhancement of pedagogical and professional competencies among PE teachers. Investments in training programs, professional development, and continuous support can enhance the effectiveness of implementing the Merdeka Curriculum, creating a more meaningful educational experience for students.

These findings can inform the design of more targeted education policies, ensuring that PE teachers have the skills and knowledge aligned with the demands of a dynamic curriculum. Thus, this research not only contributes to a deeper understanding of the factors influencing the implementation of the Merdeka Curriculum in PE but also provides empirical groundwork for improvement efforts in the education system. In conclusion, the enhancement of pedagogical and professional competencies among PE teachers is a key step in achieving the full success of the Merdeka Curriculum implementation, supporting a vision of education that is of higher quality and more relevant to the demands of the times.

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