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Enhancing learning through teachers' pedagogical skills: Self-efficacy, self-regulation, and school climate

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ABSTRACT

This research is motivated by the student's learning outcomes in the economics of SMA Negeri in Jakarta Timur, which did not reach the Minimum Completeness Criteria (KKM). This research aims to analyze the role of school climate in influencing teachers' pedagogical competence on learning outcomes through students' self-efficacy and self-regulation. The method used is a correlational study with a sample of 138 grade IX social science students selected randomly. Data were collected through questionnaires and analyzed using Structural Equation Modeling (SEM). The results show that teachers' pedagogical competence, students' self-efficacy, self-regulation, and school climate are high, while students' economics learning outcomes are moderate. Self-efficacy mediates the effect of teachers' pedagogical competence on learning outcomes. Self-regulation does not mediate this effect. School climate does not moderate the indirect effect of teachers' pedagogical competence through self-efficacy on learning outcomes. School climate also does not moderate the indirect effect of teachers' pedagogical competence through self-regulation on learning outcomes.

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ABSTRAK

Penelitian ini dilatarbelakangi oleh hasil belajar ekonomi peserta didik SMA Negeri di Jakarta Timur yang tidak memenuhi Kriteria Ketuntasan Minimum (KKM). Tujuan penelitian ini untuk mengkaji peran iklim sekolah dalam mempengaruhi kompetensi pedagogik guru terhadap hasil belajar melalui efikasi diri dan regulasi diri peserta didik. Metode yang digunakan adalah studi korelasional dengan sampel 138 peserta didik kelas IX IPS yang dipilih secara acak. Data dikumpulkan melalui angket dan dianalisis menggunakan structural equation modeling (SEM). Hasilnya menunjukkan kompetensi pedagogik guru, efikasi diri, regulasi diri peserta didik, dan iklim sekolah berada pada tingkat tinggi, tetapi hasil belajar ekonomi peserta didik berada pada tingkat moderat. Efikasi diri memediasi pengaruh kompetensi pedagogik guru terhadap hasil belajar. Regulasi diri tidak memediasi pengaruh tersebut. Iklim sekolah tidak memoderasi pengaruh tidak langsung kompetensi pedagogik guru melalui efikasi diri terhadap hasil belajar. Iklim sekolah juga tidak memoderasi pengaruh tidak langsung kompetensi pedagogik guru melalui regulasi diri terhadap hasil belajar.

Kata Kunci: *efikasi diri; hasil belajar; iklim sekolah; kompetensi pedagogik guru; regulasi diri*

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INTRODUCTION

The quality of education in Indonesia is currently low and needs improvement. Data from the World Population Review (2022) shows that Indonesia is ranked 54 out of 78 countries in the Education Rankings 2022, lagging behind Singapore (21), Malaysia (38), and Thailand (46). According to PISA 2022*(https://www.kemdikbud.go.id/main/blog/2023/12/peringkat-indonesia-pada-pisa-2022-naik-56-posisi-dibanding-2018)*, Indonesia is ranked 67th out of 81 countries (Kemendikbud, 2023). UNESCO in its Education for All (EFA) Global Monitoring Report 2017 ranked Indonesia sixth in ASEAN, while the INSEAD Global Talent Competitiveness Index 2023 ranked Indonesia 75th out of 113 countries and sixth in ASEAN with a score of 40.25.

Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional organizes evaluations of education quality to ensure accountability and improvement. The results of these evaluations are used to improve examination systems and learning methods at all levels of education. The National Exam score is a benchmark for achieving learner competencies and the National Education Standards (SNP). **Figure 1** shows the average National Exam Results for social studies high schools from 2015 to 2019.

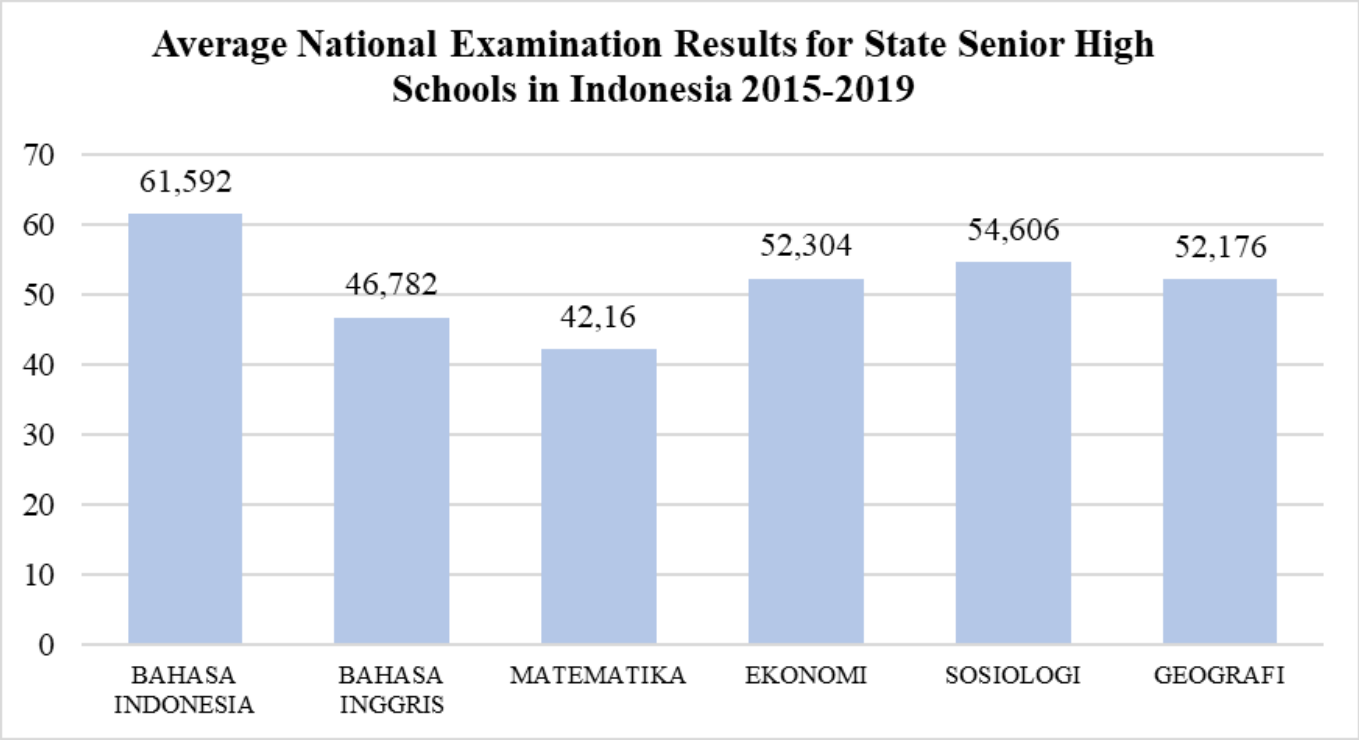

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Figure 1. Average National Examination Scores for Social Studies Majors in Indonesia in 2015-2019
Source: Kemendikbud
(https://hasilun.pusmenjar.kemdikbud.go.id/#2019!smp!capaian_nasional!99&99&999!T&T&T&T&1&!1!&)

Based on Kemendikbud data 2019 for 2015-2019, the average National Examination score of public high schools in Indonesia is below 62, with economics reaching 52.304. Economics scores are also low compared to other subjects. The following details the average economics results of the National Public High School Examination in the East Jakarta Region for 2015-2019.

Table 1. Average Score of National Examination for Economics Subject of Senior High Schools in East Jakarta 2015-2019

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School Name	Average National Exam Score				
	2015	2016	2017	2018	2019
SMA NEGERI 39	73,72	66,62	81	76,85	86,3
SMA NEGERI 58	75,77	59,97	69,91	66,22	80,99
SMA NEGERI 88	74,25	51,63	66,59	59,02	61,63
SMA NEGERI 98	76,46	59,65	70,4	66,46	72,9
SMA NEGERI 99	74,23	63,29	71,17	65,73	76,98
SMA NEGERI 104	75,68	58,07	66,31	64,75	64,77
SMA NEGERI 105	70,16	57,18	71,16	70,55	79,75
SMA NEGERI 106	74,78	54,02	69,33	66,5	74,26
SMA NEGERI 14	70,21	73,49	75,23	74,69	81,62
SMA NEGERI 51	71,52	52,39	66,67	60,34	61,96
SMA NEGERI 62	73,23	74,32	80,4	74,63	78,95
SMA NEGERI 93	69,81	58,4	70,77	61,15	66,76
SMA NEGERI 9	71,92	59,85	60,69	63,04	73,1
SMA NEGERI 42	74,93	58,94	70,5	62,18	70,91
SMA NEGERI 48	73,57	75,26	80,81	75,4	86,5
SMA NEGERI 64	70,43	62,34	65,13	60,24	67,14
SMA NEGERI 67	75,27	68,76	74,67	66,56	74,49
SMA NEGERI 81	72,3	74,51	81,05	77,06	91,38
SMA NEGERI 113	73,12	63,4	73,56	67,83	74,86
SMA NEGERI 12	76,55	74,77	75,76	70,81	79,28
SMA NEGERI 44	75,51	60,76	73,47	66,93	67,63
SMA NEGERI 50	69,44	60,8	73,58	67,29	74,24
SMA NEGERI 53	72,7	56,66	64,22	63,94	79,23
SMA NEGERI 54	75,62	57,58	79,21	62,76	76,76
SMA NEGERI 59	74,29	56,49	69,46	63,88	71,76
SMA NEGERI 61	77,5	77,97	80,38	74,72	87,39
SMA NEGERI 71	74,7	68,12	76,32	71,32	75,8
SMA NEGERI 91	72,86	58,18	67,37	61,2	74,69
SMA NEGERI 100	69,63	50,69	60,67	60,76	68,89
SMA NEGERI 103	76,46	58,93	75,14	70,7	80,96
SMA NEGERI 21	69,46	76,15	78,06	75	83,43
SMA NEGERI 22	72,05	50,98	66,92	50,5	64,03
SMA NEGERI 31	72,99	59,91	71,06	63,96	71,01
SMA NEGERI 36	74,32	59,7	66,92	60,7	63,21
SMA NEGERI 76	60,98	54,92	65	57,94	59,96
SMA NEGERI 89	67,11	58,93	62,5	66,94	73,59
SMA NEGERI 102	68,8	50,34	60	59,52	58,33
SMA NEGERI 107	69,19	55,75	65,39	64,64	69,06
SMA NEGERI 11	70,62	55,24	67,25	60,95	65,48
Rata-Rata	**72,67**	**60,73**	**71,69**	**66,18**	**74,22**

Source: Kemendikbud (https://hasilun.pusmenjar.kemdikbud.go.id/#2019!smp!capaian_nasional!99&99&999!T&T&T&T&1&!1!&)

Based on **Table 1**, the average score of the National Economics Exam in East Jakarta is 69.09, which is also low. In addition, during the period 2015-2019, Economics scores were inconsistent, going up and down every year. However, in 2019, the Economics score of East Jakarta public high schools was categorized as “good” according to the Education Assessment Center, which means that students only mastered 60-75% of the subject matter. Education is measured through national (National Exam) and school-level evaluations (Mid-term and final exams). Learners are declared complete if their PAS scores meet or exceed the Minimum Completion Criteria (KKM), which in DKI Jakarta is 75.

Various efforts to improve the quality of education have often been held, both in the form of curriculum improvements, teacher training and upgrading, as well as other efforts towards students themselves, such as strengthening the teaching and learning process, providing additional hours or tutoring, but the results obtained have not been as expected. External factors, such as teachers, parents, school facilities, and the environment, also affect student learning outcomes. Qualified teachers can provide effective stimulation,

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improving students' learning outcomes (Putri & Subowo, 2020). Undang-Undang No. 14 Tahun 2005 states that teachers must have competence in understanding and delivering teaching materials. Research shows that teachers' pedagogical competence positively affects students' learning achievement, effectiveness, and entrepreneurial attitudes. Peraturan Pemerintah No. 74 Tahun 2008 mentions that teachers must have four competencies: pedagogic, personality, professional, and social. This study focuses only on pedagogical competence, which includes understanding students, designing and implementing learning, evaluating learning outcomes, and developing students' potential (Widyaningrum *et al*., 2019). This competency is essential to improve professionalism and the quality of education in accordance with Undang-Undang Republik Indonesia Nomor 14 Tahun 2005 tentang Guru dan Dosen.

Based on several studies that discuss the problem of learning outcomes, most of them also discuss the importance of the internal state of learners. One important internal factor is how much learners believe that with their abilities, they can achieve maximum results. This kind of belief is referred to as self-efficacy. Self-efficacy is a person's belief in their ability to complete tasks and achieve goals. Learners need self-efficacy in their learning because academic self-efficacy is a strong belief that individuals have in achieving learning achievements or good learning outcomes (Putri & Subowo, 2020). Individuals with high academic self-efficacy tend to be more enthusiastic and diligent in academic activities. Conversely, individuals with low academic self-efficacy tend to doubt their abilities, which can cause them to engage in behaviors that hinder academic performance or lower their achievement, such as avoiding tasks. In connection with this statement, there is support that has a positive and significant effect on learning outcomes, which means that the higher the students' self-efficacy, the better the learning outcomes (Cahyani & Winata, 2020; Seto *et al*., 2020). In contrast, other studies did not find this effect (Fadilah & Rafsanjani, 2021).

Another internal factor that affects learning outcomes is self-regulation, which is the ability to regulate behavior, thoughts, and emotions to achieve goals. Self-regulation can be taught and learned. Research shows a relationship between self-efficacy and self-regulation, where someone with high self-efficacy tends to have good self-regulated abilities, which positively affect their ability to manage learning experiences independently and achieve optimal learning outcomes (Seto *et al*., 2020). Then another study found that self-regulated learning has a positive effect on learning outcomes (Abror, 2022; Silfiasari & Susanti, 2023), while similar studies did not find self-regulated learning to have a significant influence on student learning outcomes (Arisanti & Hakim, 2019).

The relationship between learners' self-efficacy and self-regulation is interrelated and can influence each other in achieving optimal learning outcomes. Learners with these two aspects can better manage their learning to positively impact their learning outcomes positively. Self-efficacy and self-regulation variables in this study are placed as mediator variables, which are alternative variables due to inconsistencies in previous research. Then, the relationship between self-efficacy and self-regulation of students on learning outcomes is moderated by external variables in the form of school climate. A supportive school climate can improve self-efficacy, self-regulation, and student learning outcomes. The research shows that a supportive and inclusive school environment strengthens the relationship between teacher pedagogical competence and learner learning outcomes and between self-efficacy and learner learning outcomes (Cohen & Sandy, 2023). In addition, a favorable school climate creates conditions that support student learning and development (Wang & Degol, 2022). A good school climate has a positive influence on learning outcomes (Sari *et al*., 2020; Utari *et al*., 2019; Wibowo *et al*., 2020), although other studies have not found a significant relationship (Ardiansyah & Khairul, 2022).

Based on the empirical and research gaps identified, this study is designed to explore the effect of teacher pedagogical competence on learner learning outcomes through self-efficacy and self-regulation with school climate moderation. This research will focus on economics subjects in class IX social studies in high schools in East Jakarta for the 2023/2024 school year. This research is expected to make an important contribution by answering the inconsistency of previous research results related to how teacher

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pedagogical competence, combined with internal learner factors such as self-efficacy and self-regulation, and moderated by school climate, affects learning outcomes. Thus, this study is expected to provide new insights and clarify the role of each factor in supporting learners' academic achievement.

LITERATURE REVIEW

Student Learning Outcomes

According to KBBI, learning outcomes include 'result', which means the result of effort, and 'learning', which is a change in behavior due to experience. Students' learning process and achievements are not only determined by the school, but also by the pattern, structure, and content of the curriculum. However, they are primarily determined by the competence of the teachers who teach and guide the students. In addition, competent teachers will be better able to create an effective, enjoyable learning environment and better master their class, so students' learning motivation and achievement are optimal (Putri & Subowo, 2020).

Learning outcomes are directly related to the learning process, which measures students' understanding during the learning process (Moko *et al*., 2022). Bloom's taxonomy shows three domains of learning outcomes, namely the cognitive, affective, and psychomotor domains, which means that the success or failure of students in achieving their learning outcomes depends on several influencing factors. In schools, assessment is often focused on the cognitive domain, especially economics, emphasizing understanding concepts and their applications. Measurement of learning outcomes is usually done through tests to assess changes in learner behavior after learning (Nafiati, 2021).

Teacher Pedagogical Competence

The teacher's competence greatly influences the success of the student learning process in teaching. Teachers need adequate skills to achieve educational goals, as expressed by Teacher competence in class, including ability, expertise, and readiness. The Ministry of National Education added that competence involves knowledge, skills, and fundamental values. Factors influencing teacher competence are internal, such as education and experience, and external, such as the work environment and facilities (Nurmayuli, 2020). Peraturan Pemerintah No. 74 tahun 2008 determines teacher competencies, including pedagogical, personality, professional, and social, focusing on pedagogical competencies in this study. Pedagogical competencies include understanding students, designing and implementing learning, and evaluating learning outcomes (Widyaningrum *et al*., 2019).

Pedagogical competence plays an important role because it determines the success of the learning process, which is directly related to the ability to manage learning. Pedagogical competence is measured through seven indicators, namely 1) Managing learning; 2) Understanding students; 3) Designing learning; 4) Implementing learning; 5) Utilizing learning technology; 6) Evaluating learning outcomes; and 7) Using evaluation results (Novianti & Supardi, 2019). Teachers need to build good relationships with students, create a positive learning environment, and teach in a way that is interesting and relevant to students. Teachers must also pay attention to the needs and interests of individual students and create a motivating and enjoyable learning experience. This is in line with research that has been conducted, which shows that teachers' abilities as perceived by students have a significant impact on student learning outcomes in economics subjects (Prayogo, 2019; Sariyani *et al*., 2019).

Self-Efficacy

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Self-efficacy is a person's belief in their ability to achieve a goal or cope with a situation. Self-beliefs can influence engagement in learning activities, affecting achievement levels and motivation (Apriliana & Listiadi, 2021). This opinion emphasizes the importance of self-confidence in supporting learners' learning achievement. To achieve high learning achievement, learners must have strong self-efficacy, which can affect their performance and resilience in completing school tasks. Baron and Byrne also define self-efficacy as the belief in completing tasks and achieving goals (Putri & Subowo, 2020).

Factors that can affect self-efficacy include culture, gender, the nature of the task at hand, external incentives, the status or role of the individual in the environment, and information about self-efficacy. Then there are three kinds of aspects in self-efficacy, namely 1) Magnitude, refers to the level of difficulty of the task at hand, where individuals tend to choose tasks that suit their abilities, be it low, medium, or high; 2) Generality, relates to how broadly individuals feel capable in a variety of different situations and tasks; 3) Strength, reflects the strength of a person's belief in their abilities; individuals with strong beliefs will keep trying despite facing many difficulties (Putri & Subowo, 2020).

Self Regulation

Self-regulation is how individuals manage thoughts, feelings, and actions to achieve goals, including in academic contexts where learners regulate their behavior to achieve learning outcomes. Self-Regulated Learning (SRL) is the ability of individuals to actively manage themselves in learning, including goal setting, self-monitoring, and reflection. SRL involves internal processes such as planning and self-esteem, and is influenced by the environment. Self-regulation can increase learners' motivation to learn and has been proven effective in several previous studies. Self-regulation helps learners to improve their academic performance. This shows that self-regulation is important for improving academic skills and is very influential in helping learners achieve a purposeful life with motivation to learn (Kusumawati, 2024).

Internal and external factors can influence self-regulation. Internal factors include knowledge, metacognitive processes, and academic goals. In comparison, external factors involve social support and the structure of the learning environment, such as help from others and the organization of the study place. (Zimmerman & Schunk, 2019). Applying self-regulation can help optimize the digital learning environment and academic achievement. Learners with higher SRL can optimize the digital learning environment and be more progressive in academic achievement. Indicators that can be used in measuring self-regulation are personal function, behavioural function, and environmental function, which consists of 7 strategies: memory strategy, goal setting, self-evaluation, seeking assistance, environmental structuring, learning responsibility, and organizing (Sutarni *et al*., 2021).

School's Climate

Humans are always in a relationship with place and time, from birth to death. As a social atmosphere or learning environment, school climate consists of three aspects: classroom relationships, personal growth, and system maintenance. School climate includes norms, values, relationships, teaching structures, and organizational practices influencing learners' and staff's learning experiences and well-being (Cohen, 2023). School climate is influenced by teachers, facilities, infrastructure, and building conditions (Putri & Subowo, 2020). Effective professional development programs also increase teacher self-efficacy by improving teaching practices and engagement strategies (Hidayat & Patras, 2024). Other research highlights the role of school climate in supporting teacher innovation and performance, emphasizing how school leadership can support teacher self-efficacy and motivation (Vilppu *et al*., 2024).

Strong leadership, a supportive school climate, and effective teacher professional development programs are critical to improving teachers' pedagogical skills and creating a productive learning environment.

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Qualified teachers support learners' intelligence and discipline. In addition, facilities and infrastructure such as well-organized classrooms, libraries, and learning aids are important for learning motivation. Then, the condition of the building also plays a role, with adequate ventilation, lighting, and space affecting the effectiveness of the learning process, while poor conditions can hinder it. School climate can be measured by four indicators: safety, teaching and learning, interpersonal relationships, and institutional environment (Cohen, 2023).

METHODS

This research is a non-experimental research method with a quantitative approach and a correlational study research design. Correlational study is a type of research that aims to understand the relationship between two or more variables. Data collection techniques using questionnaires are one method commonly used in quantitative research. The population in this study was all students in grade XI of 22 public high schools from 10 sub-districts in East Jakarta. In this study, the sampling technique will be used by random sampling. The sample obtained was seven schools with a total of 138 respondents, grade XI students of public high schools in East Jakarta. The sample calculation in the study used the determination of the minimum sample size through power analysis using G*Power software.

Furthermore, after the data is collected through questionnaires, it will be analyzed using the Structural Equation Model-Partial Least Square (SEM-PLS). SEM-PLS is used to test theories and overcome problems in sample data to prove the existence of a theory. This SEM-PLS analysis consists of two sub-models: the measurement model, also called the outer model, and the structural model, or inner model. The measurement model explains how variable observations describe the latent variables used for measurement. Meanwhile, the structural model describes the relationship between latent variables or constructs. The PLS analysis method predicts the relationship between constructs by looking at a picture that describes the influence between existing constructs.

RESULTS AND DISCUSSION

Results

This section discusses the main findings to meet the study's objectives. It has been divided into two main parts: measurement model assessment and structural model assessment (both are essential components of PLS-SEM).

Measurement Model

Table 2. Measurement Model Results for Validity and Reliability

Variable	Questionnaire	Item Number	Invalid Item*	Coefficient c_a **
Teacher Pedagogical Competence (X)	Teacher Pedagogical Competence Scale	1-14	-	0,944
Self Efficacy (M1)	Self-Efficacy Scale	15-23	-	0,954
Self Regulation (M2)	Self-Regulation Scale	24-30	-	0,933
School Climate (Z)	School Climate Scale	31-40	-	0,958

Source: Research 2024

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Based on the validity test results in **Table 2**, all items are declared valid with an item-total correlation coefficient exceeding 0.300, making them suitable for use as a research instrument. The reliability test results also show that all question items are reliable with a Cronbach Alpha coefficient of more than 0.70 for the variables of teacher pedagogical competence, self-efficacy, self-regulation, and school climate. Therefore, all items in this instrument can be relied on to measure the research variables.

Hypothesis Testing

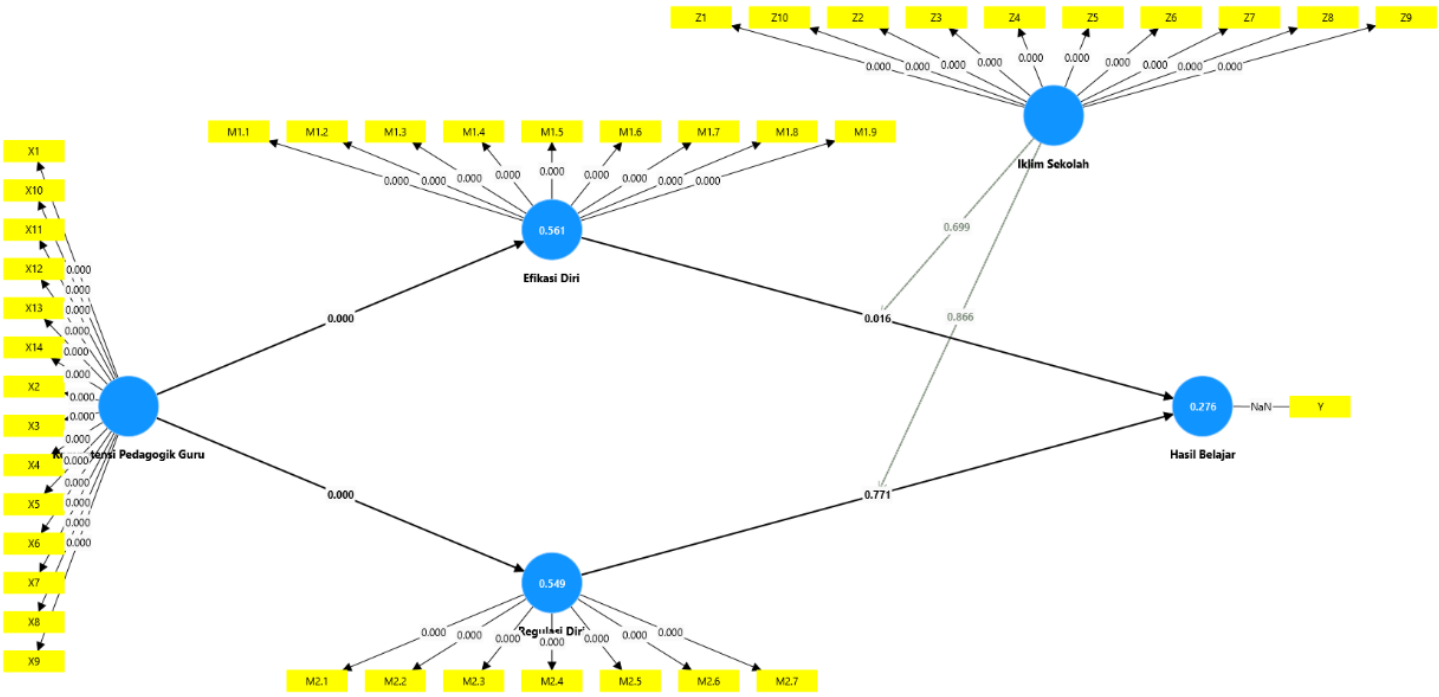

Figure 2. Research Model Results
Source: Author's Documentation 2024

Figure 2 above shows the model's results in detail, the research model's results using the Structural Equation Modeling (SEM) method. It shows the study's hypothesis testing results, including p-values between variables and between variables against indicators. Table 3 recapitulates the research model, detailed in **Table 3**.

Table 3. Path Coefficients and Specific Indirect Effect Results

Path Coefficients					
	Original sample	**Sample mean**	**Standard deviation**	**T statistics**	**P values**
Self-efficacy -> Learning outcomes	0,373	0,354	0,170	2,195	0,028
Teacher Pedagogical Competence -> Self-efficacy	0,749	0,752	0,056	13,471	0,000
Teacher Pedagogical Competence -> Self-Regulation	0,741	0,744	0,056	13,335	0,000
Self-Regulation -> Learning Outcomes	0,016	0,003	0,210	0,075	0,940
School Climate x Self-Regulation -> Learning Outcomes	-0,060	-0,063	0,141	0,425	0,671

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Path Coefficients					
	Original sample	**Sample mean**	**Standard deviation**	**T statistics**	**P values**
School Climate x Self-Efficacy -> Learning Outcomes	0,087	0,067	0,143	0,611	0,541
Specific Indirect Effect					
	Original sample	**Sample mean**	**Standard deviation**	**T statistics**	**P values**
Teacher Pedagogical Competence -> Self-Efficacy -> Learning Outcomes	0,280	0,268	0,135	2,078	0,038
Teacher Pedagogical Competence -> Self-Regulation -> Learning Outcomes	0,012	0,002	0,158	0,074	0,941

Source: Research 2024

Based on the results of hypothesis testing, it was found that self-efficacy mediates the influence of teacher pedagogical competence on learning outcomes, with a beta coefficient of 0.280, t-statistic of 2.078, and p-value of 0.038. This indicates that the first hypothesis is accepted. However, self-regulation does not mediate the influence of teacher pedagogical competence on learning outcomes, with a beta coefficient of 0.012, t-statistic of 0.074, and p-value of 0.941, so the second hypothesis is rejected. Furthermore, school climate does not moderate the influence of self-efficacy on learning outcomes, indicated by a beta coefficient of 0.087, t-statistic of 0.611, and p-value of 0.541, which means the third hypothesis is also rejected. Finally, school climate does not moderate the influence of self-regulation on learning outcomes, with a beta coefficient of -0.060, t-statistic of 0.425, and p-value of 0.671, so the fourth hypothesis is rejected.

Discussion

Self-Efficacy Mediates the Influence of Teachers' Pedagogical Competence on Learning Outcomes

This study examines how teacher pedagogical competence affects student learning outcomes, by considering the mediating role of student self-efficacy in grade IX IPS at a State Senior High School in East Jakarta. The study's findings indicate that student self-efficacy significantly mediates the relationship between teacher pedagogical competence and student learning outcomes. Most students in this study showed high levels of self-efficacy and self-confidence, closely related to their views on teacher competence in teaching economics. Students assessed that teachers have high competence, which effectively supports the formation of their self-efficacy.

The relationship between teacher leadership and self-efficacy shows that teacher leadership significantly increases self-efficacy, which impacts educational practices and outcomes. Other studies emphasize the need for culturally tailored professional development programs to maximize learner self-efficacy (Luo *et al*., 2024). This article suggests a long-term approach for further research. Professional development programs for teachers are important in improving teacher knowledge, strategies, and skills. Professional Development has positively influenced self-efficacy, especially in teaching strategies and classroom management, which supports student learning (Almajnuni & Alwerthan, 2024).

Strong teacher pedagogical competence improves students' academic understanding and strengthens their self-efficacy, ultimately contributing to better learning outcomes. In addition, emotional support provided by teachers and good classroom management skills have also been shown to play an important role in shaping students' self-efficacy. This aligns with other studies highlighting that teachers who provide emotional support and manage the classroom well can help improve students' self-efficacy (Smith &

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Johnson, 2023). In conclusion, students' perceptions of teachers' pedagogical competence are highly correlated with their level of self-efficacy, where competent teachers increase students' understanding and confidence in the learning process.

Self-Regulation Mediates the Influence of Teachers' Pedagogical Competence on Learning Outcomes

This study examines how teacher pedagogical competence influences student learning outcomes by considering the role of self-regulation in grade IX IPS students at SMA Negeri Jakarta Timur. Although self-regulation is expected to mediate this relationship, the study's results indicate otherwise; self-regulation does not mediate the influence of teacher pedagogical competence on student learning outcomes, and the hypothesis proposed in this study is not proven. However, descriptive data analysis reveals that students have quite good self-regulation in the aspects of metacognition, motivation, and behavior.

However, learners understand the concept of self-regulation but have difficulty applying it consistently. This may be due to the lack of social or emotional support they receive, or it may also be due to a mismatch between teachers' teaching methods and learners' learning styles. These factors can hinder achieving optimal learning outcomes, even though teachers have demonstrated good pedagogical competence.

In addition, the self-regulation measurement tool used in this study may not fully capture learners' abilities in everyday learning contexts, which may affect the results obtained. Previous studies have emphasized the importance of self-regulation in mediating the influence of pedagogical competence on learning outcomes. Effective self-regulation allows learners to manage their learning process better, which can improve their academic outcomes (Brown & Phillips, 2020; Zhang & Xu, 2021; Zimmerman & Schunk, 2019). These findings suggest that while self-regulation is an important component of academic achievement, its implementation in the classroom context requires a more in-depth and adaptive approach tailored to the needs of learners.

School Climate Moderates the Indirect Effect of Teachers' Pedagogical Competence on Learning Outcomes Through Self-Efficacy

This study focuses on the role of school climate in moderating the influence of teacher pedagogical competence on student learning outcomes, by considering the self-efficacy of grade IX IPS students at SMA Negeri Jakarta Timur as a mediating variable. Although the initial hypothesis stated that a favorable school climate would strengthen the relationship between teacher pedagogical competence and learning outcomes through increasing student self-efficacy, the results showed that school climate did not mediate this relationship. However, descriptive data indicated that the school had a good climate, students with high levels of self-efficacy, and satisfactory learning outcomes. Variations in the influence of school climate may be due to differences in students' characteristics, including their needs and preferences..

Although the school environment is conducive, limited resources and high academic pressure can hinder the learning process. Previous studies have found that school climate does not always moderate the relationship between teacher pedagogical competence and student self-efficacy. This suggests that individual factors such as student adaptability and family support significantly determine learning outcomes. Although a good school climate is an important element in the educational environment, it does not automatically guarantee significant improvements in student learning outcomes. In achieving optimal results, managing other variables such as family support and student psychological conditions is needed, collectively supporting a more holistic and practical learning process (Zysberg & Schwabsky, 2021).

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School Climate Moderates the Indirect Effect of Teachers' Pedagogical Competence on Learning Outcomes Through Self-Regulation

This study examines how school climate can moderate the influence of teacher pedagogical competence on student learning outcomes, with self-regulation of grade IX IPS students at SMA Negeri Jakarta Timur as a mediating variable. The study results indicate that although school climate and student self-regulation are high, school climate does not moderate the influence of teacher pedagogical competence on learning outcomes. One possible reason for this result is the variation in learning styles and motivation of students that may not be fully accommodated, even though the school climate is considered good. In addition, limitations in the measurement and implementation of teaching may also affect the results of this study.

Differences in policy implementation across classes may reduce the moderating impact of school climate, so its influence on learning outcomes cannot be measured consistently. However, in general, state senior high schools in East Jakarta have a good climate, which supports the learning process and contributes to positive learning outcomes. This finding aligns with research showing a positive relationship between a good school climate and student learning outcomes (Wibowo *et al*., 2020). However, the results of this study also emphasize the importance of considering other factors, such as the diversity of student learning styles and the implementation of educational policies, in understanding the overall influence of school climate.

CONCLUSION

Based on the data analysis, it can be concluded that in SMA Negeri Jakarta Timur, teacher pedagogical competence, self-efficacy, student self-regulation, and school climate are all in the high category, while learning outcomes in economics are in the medium category. This study found that self-efficacy is a mediator in the influence of teacher pedagogical competence on student economics learning outcomes. However, self-regulation does not mediate this influence. In addition, school climate does not moderate the influence of teacher pedagogical competence on student economic learning outcomes through self-efficacy and self-regulation. These findings indicate that although many aspects of the educational environment are optimal, there are still challenges in improving student learning outcomes. Therefore, further research is needed to explore other variables affecting student learning outcomes. This additional research is expected to help identify factors that need improvement or development to improve learning effectiveness and, ultimately, student learning outcomes.

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