



# Educational Management: What is the Role of the School Principal in the Improvement of Science Teachers' Performance?

Marlina Siregar<sup>1\*</sup>

<sup>1</sup> Accounting Department, Faculty of Economic and Business, Universitas Labuhanbatu, Rantauprapat, Sumatera Utara, Indonesia

Received: May 12, 2024

Revised: August 01, 2024

Accepted: September 25, 2024

Published: September 30, 2024

Corresponding Author:

Marlina Siregar

[siregarmarlina447@gmail.com](mailto:siregarmarlina447@gmail.com)

DOI: [10.29303/jppipa.v10i9.8706](https://doi.org/10.29303/jppipa.v10i9.8706)

© 2024 The Authors. This open access article is distributed under a (CC-BY License)



**Abstract:** Principals have an important role to play in schools in improving the performance of teachers, especially science teachers, who are often perceived by students as boring to teach. This study aimed to analyze the relationship between the role of principal and performance of science teachers in junior high school in Labuhanbatu Regency. This research is a quantitative study with a sample size of 90 junior high school teachers in Labuhanbatu Regency. Data analysis using univariate and bivariate tests. The results showed that the role of the principal was achieved (62.2%), which dominated the role of manager, educator and leader. Multiple regression test shows that the role of the principal is able to improve the performance of science teachers in the learning process ( $R = .57$  ( $R^2 = .325$ ,  $p < .01$ ). The conclusion of this study is that principals who fulfil their role can make a positive contribution to teachers, especially science teachers who often face barriers to developing interesting learning in the classroom. In addition, there are other aspects that principals should use to improve performance of science teachers

**Keywords:** Principal role; Science learning; Science teacher

## Introduction

The principal's role includes educator, manager, supervisor, leader, innovator, and motivator. They address issues like discipline, technology understanding, and lack of enthusiasm, implementing joint evaluations, training, and cooperation for improvement (Yesepa et al., 2024). They act as educators, managers, administrators, supervisors, leaders, innovators, and motivators, aiming to maximize teacher effectiveness within the educational process (Riskiyah, 2024). Principals lead by example, completing tasks efficiently and encouraging peer interactions and task orientation to boost teacher performance (Putra et al., 2023). Additionally, they provide clear direction, support, resources, training, and professional development opportunities, involve teachers in decision-making processes, offer constructive feedback,

and conduct regular evaluations to identify strengths and weaknesses for continuous improvement (Hou, 2023; Daheri et al., 2023). By creating a supportive environment and facilitating ongoing development, principals significantly contribute to enhancing the quality of teaching in schools.

Choosing a school principal is not an easy task, because to be a school principal, one must be professional in managing all organizational resources and be able to work well with a team. able to work well with a team. Principals need to be professional and good at managing human resources so that the educators they lead are not trapped or stuck in the skills they had before trapped or stuck in the skills they had before (Hamzah et al., 2023). On the other hand, finding a school principal who is suitable and has a vision and mission to improve the quality of education is a new problem in the world of education. A new problem in the world of education, because school principals have an important

## How to Cite:

Siregar, M. (2024). Educational Management: What is the Role of the School Principal in the Improvement of Science Teachers' Performance?. *Jurnal Penelitian Pendidikan IPA*, 10(9), 7046-7052. <https://doi.org/10.29303/jppipa.v10i9.8706>

role to play in supporting the success of school important role to play in supporting the success of schools.

A principal's performance can be assessed from his/her activities and role as a leader, whether he/she sets a good example and fulfils all his/her responsibilities well. leader, whether he sets a good example and carries out all responsibilities to the maximum, then that will be an assessment of the success of education quality management. that will be an assessment of the success of education quality management in the school that he leads. Principals play a significant role in creating a supportive work environment, providing relevant training, offering constructive feedback, and involving teachers in decision-making processes (Hasriani et al., 2023; Yesepa et al., 2024). They act as educators, managers, administrators, innovators, motivators, supervisors, and leaders, influencing teacher performance positively (Putra et al., 2023). By optimizing teacher performance through joint evaluations, attendance monitoring, training sessions, and fostering cooperation, principals can maximize teacher effectiveness and contribute to the quality of education in schools (Zuliyanti & Ramadan, 2023). The leadership and work motivation of principals directly impact teacher performance, emphasizing the importance of fulfilling their roles to improve teacher effectiveness (Setiawan et al., 2022).

Another factor can be seen in the lack of productivity as a principal in managing and developing teachers to achieve mutually agreed goals. Managing and developing educators to achieve mutually agreed goals. According to (Ristianti et al., 2020) one of the obstacles in improving the quality of education is the principal who lacks discipline and is not punctual and underestimates his duties. The quality of school education is the principal who lacks discipline and is not punctual and underestimates the duties that he should do.

Science teachers are professionals who are responsible for planning, implementing the learning process and assessing learning outcomes in science subjects (IPA), as well as guiding, nurturing, caring for and protecting students. The principal plays a crucial role in improving the performance of IPA teachers by providing professional development opportunities such as training and educational seminars, as suggested in the study (Edi et al., 2023), training, supervision visits, workshops, and academic oversight with clear schedules, research, assessment, and motivation for professional development (Fatimah et al., 2023). Effective leadership and work motivation from principals significantly impact teacher performance, emphasizing the importance of teachers fulfilling their

professional duties (Juniarni et al., 2022). Additionally, maximizing interpersonal communication, strict recruitment, appropriate placement, motivation provision, training, supervision, fostering, cooperative relationships, and disciplinary oversight are key strategies identified in improving teacher performance (Rozi et al., 2022). Furthermore, the effectiveness of principal supervision in enhancing teacher performance through academic and clinical supervision has been highlighted in recent studies (Usmar & Santosa, 2022). By implementing these strategies and factors, principals can effectively support and enhance the performance of IPA teachers in educational institutions.

Several studies have delved into the crucial role of school principals in enhancing the performance of teachers, particularly in the field of IPA (science) education. Principals employ various strategies such as supervision, coaching, motivation, and evaluation to improve teacher performance (Riskiyah, 2024; Nufriadi et al., 2024). They create supportive environments, provide training, offer constructive feedback, and involve teachers in decision-making processes to foster professional development and enhance teaching quality (Dewi et al., 2024). Principals act as coordinators, consultants, group leaders, and evaluators in supervising teachers, focusing on planning, implementation, and evaluation to optimize teacher performance, especially in the learning process (Hayati et al., 2023). By implementing these strategies effectively, principals play a pivotal role in creating a conducive educational environment that maximizes teacher performance and ultimately elevates the quality of education at the primary school level (Setiawan et al., 2022).

However, there is a gap in the literature regarding the influence of the principal's role on science teacher performance. The novelty of this study lies in the in-depth analysis of how the principal's role as educator, supervisor, leader, innovator and motivator can improve the performance of science teachers and how science teachers perform in the classroom when learning takes place. By understanding how educational management should be implemented through the role of the school principal, this study aims to analyse the relationship between the role of the principal and the performance of science teachers in junior high schools in Labuhanbatu Regency. Since one of the basic principles of this pedagogical approach is the constant adaptation of teachers to the particularities of each situation, we expect the performance of science teachers to adapt to the school situation. It is expected that the overall performance of science teachers will be an indication that the principal has fulfilled the role in creating an effective science learning atmosphere in the classroom.

## Method

This study uses a quantitative research design. It focuses on the effect of the principal's role on the performance of science teachers. This research was conducted in junior high schools in Labuhanbatu Regency. The research subjects in this study were 90 junior high school science teachers, consisting of 77 female teachers and 13 male teachers. This study describes data on the role of school principals in improving the performance of science teachers in the learning process, how science teachers are evaluated in the learning process, and the response of students' learning experiences in science subjects.

The instrument used in this study was a questionnaire which was developed based on the role of the principal. The developed instrument consisted of six items: principal as educator, manager, supervisor, leader, innovator, and motivator. The total number of statements respondents in the questionnaire was 70. Statistical methods used for data analysis in this study included univariate and bivariate analysis. Univariate analysis is used to determine the frequency distribution of the role of the principal, while bivariate analysis uses the multiple regression.

## Result and Discussion

The results of this correlational research are described in two parts. The first part examines the results of the survey on the role of principal in improving science teacher performance, while the second part discusses the correlation between science teacher performance and learning effectiveness.

### *Principal's Role in Improving Science Teachers' Performance*

Our first objective was to discover the role of the school principal (i.e. the educator, manager, supervisor, leader, innovator, and motivator) in the stages of IPA teacher performance improvement. The results of the survey on the role of the principal showed that 32% of teachers agreed that the principal acts as a manager, 21% as an educator, 18% as a leader, 11% as a supervisor, 10% as a motivator and 8% as an innovator. These data show that teachers agree that principals fulfil their roles with the highest percentage as managers and the lowest percentage as innovators. The findings also show that the principal's leadership role includes formulating, implementing and evaluating character-based programs, integrating aspects of development, curriculum, teaching methods, extra-curricular activities, collaboration and ensuring students' readiness for further education (Sofiah et al., 2023).

The survey results indicate that 32% of teachers agreed that the role of the principal as a manager. The role of a school principal as a manager encompasses various crucial aspects highlighted in the research papers. Principals act as managers by making plans, overseeing teaching and learning processes, evaluating outcomes, and making decisions based on collaborative agreements (Avdila et al., 2023). They also serve as change leaders, emphasizing personal qualities awareness, delegation, strengthening school culture, personalized approaches, and fostering a "learning organization" environment (Miķelsons et al., 2023). Additionally, principals are responsible for programming, organizing, activating, and supervising school activities, including detailed planning, organizational structuring, staff mobilization, and continuous supervision (Widodo et al., 2023). Furthermore, principals play a pivotal role in formulating, implementing, and evaluating programs for character-based schools, integrating various developmental aspects, curriculum enhancements, teaching methodologies, extracurricular activities, and student readiness for further education (Sofiah et al., 2023). Overall, the principal's role as a manager involves strategic planning, leadership, organizational development, and ensuring the overall success and growth of the school community (Shell, 2023).

Teachers also responded positively to the role of the school principal as an educator in the school. The survey results show that 21% of principals as educators have supported teachers in ICT development. The principal's role as an educator includes guiding teachers through workshops, educating staff and students, developing all staff, and setting a good example in the learning process (Mariana et al., 2023), involves promoting school effectiveness through instructional leadership, setting high expectations, tracking student progress, and communicating a clear school mission to enhance student learning (Nicolaou & Anastasiou, 2023).

Furthermore, the role of the principal as a supervisor was examined with the survey results showing that 11% of the teachers stated that the principal had fulfilled his role. Teachers believe that the principal does not fulfil his role as a supervisor. The principal rarely evaluates the implementation of teachers' learning in the classroom and when there are teachers who are not effective in implementing learning, the principal rarely sanctions the teacher. Supervisors play a vital role in shaping teacher competence by providing direction, motivation, and fostering a professional attitude among educators (Azizah, 2023). Efforts to overcome obstacles, such as additional tasks, limited resources, and communication challenges, are made through schedule rearrangements, teacher

training, budget allocations, and building strong cooperation with school committees (Werdingisih, 2024; Eviyanti et al., 2022)

In addition, the survey results showed that 18% of respondents stated that the role of the principal is that of a leader. As leaders, principals rarely design innovative activities to improve the performance of science teachers, such as training, providing infrastructure so that teachers do not experience barriers to carrying out learning in the classroom. The role of the principal as a leader is multifaceted and crucial for the success of educational institutions. Principals play a central role in improving the quality of education by promoting change, enhancing teacher professionalism, managing education staff effectively, and leading as change agents. Principals provide clear direction, inspire teachers, offer professional development opportunities, create a collaborative culture, and ensure a conducive learning environment (Jannah & Wahyuningsih, 2024) (Sholihah, 2024). They balance administrative tasks with leadership functions, focusing on personal qualities, delegation, school culture, individual teacher abilities, and fostering a "learning organization" environment (Setiawati et al., 2023). By effectively fulfilling these roles, principals can drive continuous improvement in education quality, student management, and overall school success.

In addition, the survey results indicate that principals rarely motivate science teachers. principals tend to be lazy in establishing communication with teachers. The role of the principal as a motivator is crucial in enhancing teacher motivation and improving overall school performance. Principals play a significant part in energizing and guiding teachers towards their goals (Nachshoni, 2024). They achieve this by building good communication, placing teachers according to their competencies, cultivating collective awareness, and ensuring a safe and orderly school environment (Yamin, 2023). Additionally, principals motivate teachers by providing rewards, setting examples of discipline, creating a fun working atmosphere, and offering encouragement for progress, ultimately increasing teacher work participation and efficiency. Effective leadership by principals is essential in aligning educators with the school's vision, mission, and objectives, leading to improved efficiency and effectiveness in work processes (Putri & Adi, 2023). By paying attention to various indicators such as maintaining a clean work environment, providing training, promoting discipline, giving awards, and offering learning resources, principals optimize teacher performance and enhance teacher work motivation.

On the latter, the survey found that only 8% of teachers agreed with the principal's role as an innovator, suggesting that principals are not able to create an

environment that encourages science teachers to experiment in order to increase teacher innovation that can be used in learning (Dederig & Pietsch, 2023 ;Sidiki et al., 2024) Innovative school leaders demonstrate leadership behaviors that contribute to the establishment of innovative cultures within schools, resulting in enhanced teaching and learning quality (Nebieridze, 2023). By supporting successful innovation through initiatives like Zambian Education School-based Training (ZEST), school leaders can challenge limiting attitudes, promote learner-centeredness, and drive positive change in teaching practices (Shiwakoti, 2022). Additionally, the entrepreneurial leadership of school principals is highlighted as a key factor in developing teacher innovation and fostering creativity within school cultures.

The data from the survey were then using univariate analysis. The results of the univariate analysis are shown in Table 1.

**Table 1.** Univariate analysis of the role of principals in improving science teacher performance

Role of the principal	Frequency	Percentage (%)
Reached	56	62.20
Not reached	34	37.80
Total	90	100

According to Table 1, 26 teachers (62.20%) stated that the principal's role had been achieved and 14 teachers (37.8%) stated that it had not been achieved. This data shows that in terms of educational management, principals have not played an active role in carrying out their duties. This indicates that an evaluation is needed for principals to assess their role during their time in school.

*Performance of Science Teachers in the Learning Process*

After an explanation of the role of school leaders, this section will be a discussion of the performance of science teachers in the classroom learning process.

**Table 2.** Univariate Analysis of the Performance of Science Teachers in the Learning Process

Performance of Science Teacher	Frequency	Percentage (%)
Reached	42	46.67
Not reached	48	53.33
Total	90	100

Table 2 shows that 42 (46.67%) of the students who of the students stated that the science learning conducted by the teacher in the classroom made the students excited. Meanwhile, 48 (53.33%) of the students stated that science learning was less interesting because

the teacher only provided subject matter without any practical or other activities. This finding implies that the role of the principal tends to be seen as less able to improve the performance of science teachers, so that they are not seen as able to improve the performance of science teachers.

*Correlation Between the Role of the Principal and the Performance of Science Teachers in Teaching and Learning.*

The analysis of the survey was followed by an examination of the correlation between the role of the head teacher in improving the performance of science teachers and student achievement. Correlation. The results of the correlation analysis are presented in Table 3.

**Table 3.** Correlation of Role the Principal And The Performance of Science Teachers in Teaching and Learning

Role of Principal	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	RMSE
Educator	.57	.325	<.01	0.24
Manager				
Supervisor				
Leader				
Innovation				
Motivator				

According to the results of multiple regression tests, significant role of the principal for performance of science teachers in teaching and learning ( $R = .57$  ( $R^2 = .325$ ,  $p < .01$ ). Based on the results of the above research, an examination of the role of the principal shows the intensity of leadership management that should be able to improve the performance of science teachers. In the role of manager, it shows that principals are able to manage schools starting from planning school work programmes, managing and utilising human resources or existing facilities and infrastructure, implementing jointly designed programmes, controlling and evaluating the implementation of school programmes. In this case, science teachers show high enthusiasm to continue to be active and improve performance in the learning process in the classroom, and if teachers encounter obstacles, science teachers can discuss directly with the principal (Zuliyanti & Ramadan, 2023). Teachers need a principal who is able to support the continuity of the learning process by completing facilities and infrastructure and evaluating teacher performance (Kerans et al., 2024; Dwiningsih & Aisy, 2024).

In addition, in the role of leader, teachers who participated in this survey indicated that they appreciated the leadership of the principal. This

appreciation is shown by guiding students to grow and develop into people who are able to adapt and overcome various obstacles. The survey results also show that when the principal explains the vision and mission and the programs to be achieved, the school is more likely to be successful, for science teachers in particular, the principal has designed facilities and infrastructure to support effective learning (Hayati et al., 2023 ;Setiawan et al., 2022). The principal must be able to provide a range of supervision and control to improve the performance of educational staff. Their role includes monitoring learning activities, providing guidance to teaching staff, evaluating the curriculum and ensuring that school policies are adhered to. The role of the principal is to be a person who is loved, trusted, able to lead and has a pleasant character, while the role of the teacher is to participate in activities (MGMP), make lesson plans and guide students to become better people. The role of teachers in science education includes: education and teaching, facilitator, developer of scientific attitudes, leader, motivator, cultivator of constructivist view, and evaluator and all this can be achieved if the principal fulfils the role.

The next result of the survey is the low role of the principal as an innovator. This shows that the principal lacks the ability to develop innovative learning models, so that science teachers are not free to develop the learning process in the classroom and to learn the latest learning models that can improve the learning activities in the school. Principals should believe that the ability to build good motivation will build and improve work effectiveness and efficiency (Sabirin, 2012), so that subordinates are able to be creative to achieve good quality education.

The results showed that the performance of science teachers in the learning process based on survey results from students as many as 48% answered not reached. This shows that so far performance of science teachers is not optimal. This is because science teachers are not developing innovative media for the learning of science. Teacher performance standards relate to the quality of teachers' performance of tasks such as: working with individual students, lesson preparation and planning, use of learning media, engaging students in a variety of learning experiences; and active teacher leadership. The role of an IPA teacher is to develop innovative science learning media based on local potential to enhance professional competence (Suryanda et al., 2020). For example, in the process of learning science, in addition to teaching scientific concepts, teachers can also instil religious character, discipline, thoroughness, develop attitudes of curiosity, courage, respect for the opinions of others, following the results of joint decisions and honesty (Kissau & Adams, 2016 ;Abdullah et al., 2024)

When an IPA teacher's performance is not achieved, the principal plays a crucial role in addressing this issue. Principals can plan and implement teacher performance coaching programs, provide guidance, conduct routine performance assessments, and offer motivational training to improve teacher performance and learning quality (Rostini et al., 2022; Madyan et al., 2022). Additionally, principals can enhance teacher quality through effective performance appraisals, collaboration with supervisors, and implementing reward systems to motivate teachers. The principal's effectiveness directly impacts teacher performance, which in turn affects student achievement in school exams and report card scores (Muspawi, 2021; Yusuf et al., 2024). Overall, the principal acts as a leader, educator, motivator, and supervisor, driving efforts to improve education quality and teacher performance within the school setting (Yamin, 2023).

The results of this study suggest that the performance of science teachers needs to be enhanced by the role of the school principal, so that teachers do not experience obstacles in carrying out the learning process and students are enthusiastic about participating in learning activities at school. When the performance of a science teacher develops, the teacher can be used as a role model. In this case, however, the role of the principal cannot be ignored. Without a strong role of the principal, the performance of science teachers cannot be improved.

## Conclusion

To improve the performance of science teachers, the role of the headteacher as manager, supervisor, leader, mentor, motivator and innovator is required to create a conducive learning environment for pupils. The principal must be able to mobilise all the resources considered capable of motivating teachers to actively innovate, to build relationships with the environment in order to create a harmonious atmosphere, enthusiasm and creativity in the implementation of planning, implementation and evaluation. The results of this study show that principals who fulfil their role can make a positive contribution to teachers, especially science teachers who often face barriers to developing interesting learning in the classroom. In addition, there are other aspects that principals should use to improve the performance of science teachers

## Acknowledgments

The researcher is grateful to the schools that have been part of this research project.

## Author Contributions

M. S the author of all research results

## Funding

This research is self-funded.

## Conflicts of Interest

Authors declare no conflicts of interest

## References

- Abdullah, E. N. W., Sutrio, Ayub, S., & Doyan, A. (2024). Pengembangan Perangkat Model Problem Based Learning Dengan Google Classroom Untuk Meningkatkan Penguasaan Konsep Suhu Dan Kalor Peserta Didik. *Jurnal Penelitian Pendidikan IPA*, 10(6), Article 6. <https://doi.org/10.29303/jppipa.v10i6.5205>
- Avdila, R., Seri, H., & Petrossky, R. (2023). Peran Kepala Sekolah Sebagai Manajer di SMA Negeri 4 Talang Ubi. *Jurnal Visionary : Penelitian Dan Pengembangan Dibidang Administrasi Pendidikan*, 11(2), 85–92. <https://doi.org/10.33394/vis.v11i2.8666>
- Azizah, K. (2023). Perilaku Kepala Sekolah Sebagai Supervisor Dalam Membentuk Kompetensi Profesionalisme Guru. *Skills: Jurnal Riset Dan Studi Manajemen Pendidikan Islam*, 87–96. <https://doi.org/10.47498/skills.v2i2.2283>
- Daheri, M., Meliani, F., Putra, F. T., Saputra, N., & Syarifah, Z. (2023). The Effect of Principal Leadership and Work Discipline on Teacher Performance. *Nidhomul Haq: Jurnal Manajemen Pendidikan Islam*, 8(3), Article 3. <https://doi.org/10.31538/ndh.v8i3.3937>
- Dedering, K., & Pietsch, M. (2023). School leader trust and collective teacher innovativeness: On individual and organisational ambidexterity's mediating role. *Educational Review*, 1(1), 1–30. <https://doi.org/10.1080/00131911.2023.2195593>
- Dewi, F., Maiysaroh, M., & Ubaidillah, A. F. (2024). School Principals' Strategies in Improving Primary School Teachers Performance: Literature Review Study. *International Journal of Business, Law, and Education*, 5(2), Article 2. <https://doi.org/10.56442/ijble.v5i2.624>
- Dwiningsih, K., & Aisy, N. (2024). Development of Project-Based Learning Oriented Student Worksheets to Improve Students' Creative Thinking Skills on Class X High School Nanotechnology Material. *Jurnal Penelitian Pendidikan IPA*, 10(7), Article 7. <https://doi.org/10.29303/jppipa.v10i7.7821>
- Edi, S., Nur, A., & Fitria, H. (2023). Implementation of Principal's Leadership in Improving Teacher Performance. *Journal of Social Work and Science*

- Education*, 2(1), 567.  
<https://doi.org/10.52690/jswse.v4i3.488>
- Eviyanti, S. J., Ngabekti, S., & Sumarni, W. (2022). The Effectiveness of Teaching Materials Based on Local Wisdom in the Takalar Region to Improve Literacy Capabilities of High School Students. *Jurnal Penelitian Pendidikan IPA*, 8(6), Article 6.  
<https://doi.org/10.29303/jppipa.v8i6.1978>
- Fatimah, M., Mustofa, M., Putra, R. P., Zinah, M. M. A., & Masuwd, M. (2023). Optimization of The Principal's Role As A Supervisor To Improve The Performance Of Teachers In Surakarta. *Profetika: Jurnal Studi Islam*, 24(02), Article 02.  
<https://doi.org/10.23917/profetika.v24i02.1986>
- Hamzah, H., Syafrianti, T., Susanto, B. W., Wismanoto, W., & Em, R. T. A. (2023). Peran Kepala Sekolah Dalam Meningkatkan Manajemen Mutu Pendidikan Di Sekolah Dasar Islam Al-Rasyid Pekanbaru. *Journal on Education*, 6(1), Article 1.  
<https://doi.org/10.31004/joe.v6i1.3617>
- Hasriani, H., Rosma, R., & L, K. (2023). The Role of Principal Management in Improving Teacher Performance. *Qistina: Jurnal Multidisiplin Indonesia*, 2(2), Article 2.  
<https://doi.org/10.57235/qistina.v2i2.714>
- Hayati, R., Marzuki, M., Yus, A., & Armanto, D. (2023). Leadership of the School Principle in Improving Teacher Performance in Elementary Schools. *Tadbir: Jurnal Studi Manajemen Pendidikan*, 7(2), Article 2.  
<https://doi.org/10.29240/jsmp.v7i2.7141>
- Hou, S. (2023). School Principal Academic Supervision in Improving Teacher Performance at Cokroaminoto Kauditan Elementary School. *Journal of Social Research*, 3(1), 126-144.  
<https://doi.org/10.55324/josr.v3i1.1663>
- Jannah, R., & Wahyuningsih, O. (2024). The Leadership Role of The School Principal in Effective Educational Management. *Asian Journal of Engineering, Social and Health*, 3(3), Article 3.  
<https://doi.org/10.46799/ajesh.v3i3.282>
- Juniarni, C., Sa'dullah, A., Luviadi, A., Pramitha, D., & Nikma, N. (2022). Principal's Strategy in Improving Teacher Performance. *Jurnal Prajaiswara*, 3(1), Article 1.  
<https://doi.org/10.55351/prajaiswara.v3i1.41>
- Kerans, G., Sanjaya, Y., & Liliarsari. (2024). Nyale: Sumba's Typical Polychaeta in Cultural and Science Studies as Authentic Science Learning Materials. *Jurnal Penelitian Pendidikan IPA*, 10(7), Article 7.  
<https://doi.org/10.29303/jppipa.v10i7.6250>
- Kissau, S., & Adams, M. J. (2016). Instructional Decision Making and IPAs: Assessing the Modes of Communication. *Foreign Language Annals*, 49(1), 105-123.  
<https://doi.org/10.1111/flan.12184>
- Madyan, M., Mahdayeni, M., Maryam, M., & Anwar, K. (2022). Improving the quality of teachers through assessing the teacher's performance. *Jurnal Konseling Dan Pendidikan*, 10(3), Article 3.  
<https://doi.org/10.29210/184200>
- Mariana, M., Putra, P., & Jaelani. (2023). Peran Kepemimpinan Kepala Sekolah dalam Meningkatkan Mutu Pendidikan di SDS Islam Terpadu Sulthoniyah Sambas. *Jurnal Pendidikan Dasar Islam*, 1(3), Article 3.  
<https://doi.org/10.58540/jurpendis.v1i3.460>
- Mikelsone, I., Grava, J., & Latsone, L. (2023). A School Principal as a Change Leader In Education. *Education. Innovation. Diversity.*, 2(7), Article 7.  
<https://doi.org/10.17770/eid2023.2.7352>
- Muspawi, M. (2021). Strategi Peningkatan Kinerja Guru. *Jurnal Ilmiah Universitas Batanghari Jambi*, 21(1), Article 1.  
<https://doi.org/10.33087/jjubj.v21i1.1265>
- Nachshoni, A. (2024). The Impact of Principal on Teacher Motivation in Secondary Schools. *Journal of Artificial Intelligence General Science (JAIGS) ISSN:3006-4023*, 4(1), Article 1.  
<https://doi.org/10.60087/jaigs.v4i1.79>
- Nebieridze, K. (2023). Innovative School Leadership Aspects. *Sciend*, 31(45), 701-711.  
<https://doi.org/10.2478/jles-2023-0002>
- Nufriadi, N., Putra, M., & Mukhlisuddin, M. (2024). Peran Supervisi Kepala Sekolah dalam Meningkatkan Kinerja Guru Kelas Jenjang SD pada Gugus XXXVI Ateuk Kecamatan Kuta Baro Kabupaten Aceh Besar. *Indo-MathEdu Intellectuals Journal*, 5(1), 420-432.  
<https://doi.org/10.54373/imeij.v5i1.804>
- Putra, J. N. A., Baharuddin, B., Maimun, A., Haris, A., & Barizi, A. (2023). The Role of The School Principal in Improving Teacher Performance and School Quality. *Nidhomul Haq: Jurnal Manajemen Pendidikan Islam*, 8(3), Article 3.  
<https://doi.org/10.31538/ndh.v8i3.4379>
- Putri, I. O., & Adi, N. (2023). Persepsi Guru Tentang Peran Kepala Sekolah Sebagai Motivator di Sekolah Menengah Atas Negeri Se-Kota Pariaman: Indah Ondryma Putri, Nelfia Adi. *Journal of Practice Learning and Educational Development*, 3(3), Article 3.  
<https://doi.org/10.58737/jpled.v3i3.194>
- Riskiyah, E. M. (2024). Strategi Kepala Sekolah Dalam Meningkatkan Kinerja Pendidik Melalui Manajemen Supervisi. *An-Nadzir : Jurnal Manajemen Pendidikan Islam*, 2(01), Article 01.  
<https://doi.org/10.55799/annadzir.v2i01.437>
- Risianty, D. H., Putrajaya, G., & Fathurrochman, I. (2020). Organizational behavior management through group counseling discussions as a

- radicalism preventive effort. *Jurnal Konseling Dan Pendidikan*, 8(1), Article 1. <https://doi.org/10.29210/139900>
- Rostini, D., Syam, R. Z. A., & Achmad, W. (2022). The Significance of Principal Management on Teacher Performance and Quality of Learning. *AL-ISHLAH: Jurnal Pendidikan*, 14(2), Article 2. <https://doi.org/10.35445/alishlah.v14i2.1721>
- Rozi, A., Musfiqon, M., & Prasetya, B. (2022). The Effectiveness of Principals' Supervision in Improving Teacher Performance. *KnE Social Sciences*, 290-299. <https://doi.org/10.18502/kss.v7i10.11231>
- Setiawan, U., Drajat, D., Hermawan, A., Yusuf, Y., & Gaffar, M. A. (2022). Principal Leadership in Improving Teacher Performance in Schools. *International Journal of Educational Research & Social Sciences*, 3(6), Article 6. <https://doi.org/10.51601/ijersc.v3i6.553>
- Setiawati, M., Arifin, Z., & Defirono, I. (2023). The leadership of the school principal in realizing independent learning. *Jurnal Ilmu Pendidikan Dan Sains Islam Interdisipliner*, 203-216. <https://doi.org/10.59944/jipsi.v2i4.223>
- Shell, D. L. (2023). Principals as Human Capital Managers: A Literature Review. *International Journal of Contemporary Education*, 6(1), Article 1. <https://doi.org/10.11114/ijce.v6i1.5928>
- Shiwakoti, K. P. (2022). Leading Schools for Innovation and Change: A Case Study of Successful Schools. *Journal of Teson*, 3(1), Article 1. <https://doi.org/10.3126/jteson.v3i1.51765>
- Sholihah, I. M. (2024). The Role of The School Principal As A Learning Leader In Strengthening The Professionalism Of Batik Surakarta Junior High School. *International Journal of Research in Education*, 4(1), Article 1. <https://doi.org/10.26877/ijre.v4i1.16791>
- Sidiki, S. A. A., Abdjul, T., Lamangantjo, C. J., Buhungo, T. J., Yusuf, F. M., & Hermanto, I. M. (2024). The Implementation of PBL Model on Student Learning Outcomes in the Concept of Life Organizational Systems. *Jurnal Penelitian Pendidikan IPA*, 10(8), Article 8. <https://doi.org/10.29303/jppipa.v10i8.8100>
- Sofiah, S., Zaini, Z. A. H., & Saihan, S. (2023). The Managerial Role of School Principals in Realizing Superior Schools with Character. *Eduotec: Journal of Education and Technology*, 6(4), Article 4. <https://doi.org/10.29062/edu.v6i4.628>
- Suryanda, A., Azrai, E. P., & Setyorini, D. (2020). Media Pembelajaran Inovatif Berbasis Potensi Lokal untuk Meningkatkan Kompetensi Profesional Guru IPA. *Jurnal Solma*, 9(1), Article 1. <https://doi.org/10.29405/solma.v9i1.4406>
- Usmar, R. J., & Santosa, A. B. S. (2022). Improving Teacher Performance Through a Good Leadership and Motivational Approach. *Manageria: Jurnal Manajemen Pendidikan Islam*, 7(1), Article 1. <https://doi.org/10.14421/manageria.2022.71-05>
- Werdiningsih, R. (2024). Role of the supervision of the school principal in improving the quality of learning at state elementary school's post-pandemic COVID-19. *International Journal of Education and Practice*, 12(2), Article 2. <https://doi.org/10.18488/61.v12i2.3674>
- Widodo, Danim, S., & Kartiwi, A. P. (2023). The Role of "Penggerak" and Independent Principal as Manager. *International Journal of Innovation and Education Research*, 2(1), Article 1. <https://doi.org/10.33369/ijier.v2i1.29115>
- Yamin, M. (2023). Analisis Peran Kepemimpinan Kepala Sekolah Dalam Upaya Meningkatkan Motivasi Dan Kinerja Guru Di Smk Negeri 2 Kualuh Selatan Tanjung Pasir Labuhanbatu Utara Sumatera Utara. *Manajerial: Jurnal Inovasi Manajemen Dan Supervisi Pendidikan*, 3(3), Article 3. <https://doi.org/10.51878/manajerial.v3i3.2513>
- Yesepa, Y., Haryaka, U., & Akhmad, A. (2024). The Role of the School Principal in Improving the Performance of Elementary School Teachers in Catholic Schools in Samarinda City. *EduLine: Journal of Education and Learning Innovation*, 4(1), 7-14. <https://doi.org/10.35877/454RI.eduline2235>
- Yusuf, M., Yunginger, R., & Nainggolan, R. (2024). Quality of Physics Teaching Module Based on Problem-Based Learning Model Integrated with PhET Simulation on Energy and Its Transformation. *Jurnal Penelitian Pendidikan IPA*, 10(6), Article 6. <https://doi.org/10.29303/jppipa.v10i6.7037>
- Zuliyanti, T. R., & Ramadan, Z. H. (2023). Peran Kepala Sekolah Dalam Meningkatkan Mutu Dan Kinerja Guru Sekolah Dasar. *Jurnal Elementaria Edukasia*, 6(3), Article 3. <https://doi.org/10.31949/jee.v6i3.6305>