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THE INFLUENCE OF SCHOOL PRINCIPAL MANAGEMENT ON INCREASING DIGITAL-BASED TEACHERS' CAPABILITY IN MIN CITY OF BANDA ACEH

Safranovi¹⁾, Nasir Usman²⁾, Murniati AR³⁾

¹⁾ Universitas Syiah Kuala, Banda Aceh, Indonesia
E-mail: safranovi@mhs.usk.ac.id

²⁾ Universitas Syiah Kuala, Banda Aceh, Indonesia
E-mail: nasir@usk.ac.id

³⁾ Universitas Syiah Kuala, Banda Aceh, Indonesia
E-mail: purelyati@usk.ac.id

Abstract. Digital-based teacher capabilities have a very important role in the current modern educational context. With the rapid development of technology, the integration of technology in learning has become a necessity. Various methods or programs are needed to improve digital-based teacher skills. This research aims to determine the influence of school principal management on increasing digital-based teacher capabilities. The research method used is an experimental method with a one group pretest-posttest design. The subjects in this study consisted of 8 people each, 2 school principals and 2 head of curriculum, 2 supervisors and 2 teachers from each school who were taken using saturated sampling techniques. Data collection techniques in this research used interviews, questionnaires and test results. The data analysis technique used uses a qualitative and quantitative approach. The results of the T test show a significance value of $0.002 < 0.05$, which shows that there is an influence of school principal management on digital-based teacher abilities. The N-Gain Test results show a score of 70% indicating an increase in digital-based teacher abilities. Therefore, school principal management provides improvements to digital-based teacher capabilities.

Keywords: Management, Principals and Digital-Based Teacher Capabilities

I. INTRODUCTION

The importance of developing teacher pedagogical competence will be a determining factor in a quality educational process because it is something that teachers must master, namely utilizing various resources to support learning, including mastering science, information and communication technology in accordance with current developments (Efendi, 2021; Siregar, 2020; Sudargini & Purwanto, 2020). For example, so that students don't get bored, teachers can make PPTs (power points), learning videos by adding animations, or they can also create an account so they can access digital platforms so as to create a fun and optimal learning atmosphere using IT devices.

Madrasah Ibtidaiyah Negeri (MIN) in Banda Aceh City, as an Islamic educational institution, has a big responsibility in producing a generation that not only excels academically, but is also able to adapt to technological developments. MIN Banda Aceh City also plays a strategic role in character building and improving the quality of human resources at the basic level. However, real challenges arise along with technological developments in this era. Teachers at MIN Banda Aceh City need to understand and integrate technology

in the learning process in order to provide relevant and adequate educational experiences for students.

Some of the specific problems faced are the lack of teacher understanding regarding the use of technology in learning, especially in the context of the Islamic curriculum. Insufficient availability of adequate resources and training. Many teachers may not have access to sufficient or structured training to develop their digital skills, either due to limited time, funds or other resources. Apart from that, supporting infrastructure such as limited internet access and inadequate availability of digital devices are also major obstacles. This shows the need for school principal management support in overcoming these practical obstacles.

The importance of continuing education in the digital era requires a paradigm shift and increasing teacher capabilities (Ally, 2019; Bratianu, Hadad, & Bejinaru, 2020; Rahmatullah, Mulyasa, Syahrani, Pongpalilu, & Putri, 2022). This transformation shows that digital learning does not just provide wider access to information, but also has the potential to increase student engagement and help them develop skills that meet future demands. In this context, school principal management plays a key role as a catalyst for change (Ahmed, Shehata, & Hassanien, 2020; Bergdahl, Nouri, & Fors, 2020;

Chiu, 2021). Principal management needs to initiate comprehensive training programs, provide technical support, and create an environment that supports the integration of technology in daily learning (Chao et al., 2023; Uğur & Koç, 2019; Urbinati, Chiaroni, Chiesa, & Frattini, 2020). One of the main benefits of principal management is its ability to improve digital-based teacher skills (Devisa, Matin, & Ahmad, 2023; Marmoah, Indrastoeti Siti Poerwanti, & Suharno, 2023; Meilani & Ahyani, 2024). By initiating comprehensive training programs, principals can help teachers develop a better understanding of educational technology and its application to learning (Makransky & Petersen, 2021; Renz & Hilbig, 2020; Uğur & Koç, 2019). This not only broadens their horizons about the various digital tools and resources available, but also helps them integrate these technologies effectively in their daily learning activities. Teachers who are skilled in the use of technology can create more engaging and relevant learning experiences for students, increasing their engagement in the learning process (Heilporn, Lakhali, & Béliste, 2021; Oliveira, Grenha Teixeira, Torres, & Morais, 2021; Tuma, 2021). Additionally, technology-savvy teachers are also more likely to prepare students with the skills necessary to succeed in a technology-driven world, such as problem-solving abilities, creativity, and digital literacy (Aithal & Aithal, 2020; Lebid, Krasulia, Sushkova, & Shevchenko, 2021; Mhlongo, Khoza, & Skosana, 2023). All organizational management efforts are carried out by the school principal to improve the teacher's ability to use digital devices as a creative and fun learning medium (Jannah, Prasajo, & Jerusalem, 2020; Pangestu & Hermanto Karwan, 2021; Tołwińska, 2021).

Several studies on school principal management, such as research conducted by Puspitasari (2021) on the influence of school management and teacher professionalism on teacher performance, show results that the principal's management influences teacher performance. Research conducted by Suyitno (2021) on the influence of school principals' managerial skills and the role of committees on the effectiveness of school-based management shows that there is a positive and significant influence between school principals' managerial skills on the effectiveness of SBM. Apart from that, research also conducted by Dacholfany (2020) on the influence of principal management and teacher pedagogical competence on teacher performance in East Lampung shows the results that principal management performance has an influence on teacher performance. The three studies above have similarities with this research in that they both discuss school principal management. However, previous research has not focused its research on increasing technology-based teacher abilities. So it is important to conduct research on the influence of school principal management on increasing digital-based teacher abilities.

II. METHODS

The research method used in this study is the experimental method. The experimental method is defined as an approach that is used to observe the impact of certain treatments on

other variables in a controllable environment (Sugiyono, 2013). The experimental method applied in this research uses a pre-experimental design with a One Group Pretest – Posttest Design approach. This is experimental research carried out on only one group that is chosen randomly and there is no testing of the stability or condition of the group before being given treatment. The One Group Pretest – Posttest approach is designed by conducting a pre-test before giving treatment and a post-test after giving treatment for each training session. The One Group Pretest – Posttest scheme can be seen in the following table.

TABLE I
ONE GROUP PRETEST – POSTTEST SCHEME

Pretets	Treatment	Posttest
T1	X	T2

Information:

T1: The initial test (pretest) is carried out before being given treatment

X: Treatment where the school principal will provide training or guidance on the use of digital technology in learning.

T2: The final test (posttest) is carried out after being given treatment

The population in this study was taken from 2 schools, namely MIN 6 Banda Aceh City and MIN 9 Banda Aceh City. The research sample was taken using a saturated sampling technique, that is, all members of the population were included in the sample in the research (Sugiyono, 2013). The use of saturated sampling techniques is due to the relatively small population of less than 30 people. Thus, a total of 8 people were included consisting of 2 principals and 2 deputy heads of curriculum, 2 supervisors and 2 teachers from each school. Research data was collected through interviews, questionnaires and teacher test results.

In this study, the data collection techniques used include direct observation, in-depth interviews, and analysis of test results. Observations are conducted to understand the phenomena that occur in the field, while interviews aim to obtain subjective views and experiences from respondents. In addition, test results will be analyzed to obtain quantitative information that can support research findings on the influence of school principal management on increasing digital-based teachers' capability in MIN city of Banda Aceh.

This research instrument consists of pretest and posttest test results. The instrument used in this research used an essay test. The essay test instrument indicators consist of: (i) the role of digital technology in increasing the effectiveness of learning in the classroom; (ii) digital-based teacher capabilities can increase student engagement in learning and facilitate instructional differentiation; (iii) design for developing technology-based media or teaching materials.

So that the instrument used can assess the teacher's ability to apply digital or technology in the educational environment, a validity and reliability test of the instrument is carried out. The instrument validity test can be seen in the following table.

TABLE II
 TEST INSTRUMENT INDICATORS

N	Indicator	Sig value. (2-tailed)
1.	the role of digital technology in increasing the effectiveness of learning in the classroom	0.512
2.	digital-based teacher capabilities can increase student engagement in learning and facilitate differentiation of instruction	0.671
3.	design for developing technology-based media or teaching materials	0.657

Table 2 shows that the three indicator items have significance values above 0.05. This shows that the instrument can be used to assess digital-based teacher abilities. Apart from that, the results of the instrument reliability test can be seen in the following table.

TABLE III
 RELIABILITY TEST OF RESEARCH INSTRUMENTS

Cronbach's Alpha	N of items
0.689	8

Based on this table, it can be seen that the reliability test carried out with the research instrument can be called reliable because it is related to the Cronbach Alpha coefficient of $0.689 > 0.05$. Thus it can be concluded that the instrument developed can assess teacher abilities. Based on this statement, it can be said that the instrument tested was successful because it was valid and reliable.

To determine the influence of school principal management on increasing digital-based teacher abilities, a t-test with an independent sample t-test was carried out. Apart from that, the N-Gain Test was used in this research to find out how much the principal's management contributed to digital-based teacher capabilities. Assuming scores fall in the moderate or high range, the resulting media can be successfully used to enhance the use of primary source evidence skills. Conversely, if the value is low, it indicates that the media is not effective in improving this attribute. The N-Gain criteria formulated by Richard Hake (1999) were used to determine the impact of virtual field visits on the use of primary source evidence, as follows.

TABLE IV
 CRITERIA FOR N-GAIN SCORE

Intervals	Criteria
$g \geq 0.7$	High
$0.3 \leq g < 0.7$	Middle
$g < 0.3$	Low

In this research, combination of quantitative and qualitative data analysis methods was employed to ensure a well-rounded understanding of the subject matter. Qualitative analysis was specifically utilized to describe the application of school principal management and to gather input regarding the effectiveness of these strategies from various stakeholders. Additionally, to evaluate the impact of principal management

on the digital competencies of teachers, statistical analyses were conducted using t-tests and N-gain tests. These analyses were performed with SPSS version 25.0 software, facilitating a rigorous examination of the data.

III. RESULT

A. Implementation of Principal Management in Increasing Digital-Based Teacher Capacity

The implementation of Principal Management in Increasing Digital-Based Teacher Capacity has been carried out by the Banda Aceh City MIN school in the following stages.

1) Program School Principals in Improving Digital-Based Teacher Capabilities in MIN Banda Aceh City

The research results show that the school principal's program to improve digital-based teacher abilities implemented by MIN Banda Aceh City principals in schools includes: digital or IT training for teachers, digital-based educational seminars, teacher workshops, digital-based KKG, giving rewards to teachers who excel and providing Wide access for teachers to use. The purpose of this program is to determine the abilities and expertise of teachers. This also provides motivation and appreciation for digital-based teacher abilities. In addition, the head of the Min City of Banda Aceh in leading educational institutions implements strategic steps in implementing digital-based teacher professional capability/competence improvement programs, namely, coordinating with all coordinators at each class level to increase cooperation in implementing digital-based teacher capability improvement programs.

The teacher programs mentioned above require careful planning and strategies, so that the goals set by the school can be achieved. In planning, determining policy strategies, programs, projects, methods, budget systems and standards needed to achieve goals. Therefore, in order to manage this planning, it is necessary to prepare a plan for the program to be implemented and the goals formulated, so that all the goals to be achieved can be realized well.

The Head of MIN Banda Aceh City in improving teachers' abilities, also supports teacher activities, namely reading learning literature, teacher training on learning processes and media, exchanging information through KKG or with friends in the team who can develop teachers' professional competence, especially capable developing digital-based teacher capabilities. These activities are often carried out by teachers at MIN Banda Aceh City as activities to support the development of teachers' soft skills

As a teacher who has good soft skills, teachers are able to implement productive performance which really supports the management efficiency of MIN Banda Aceh City principals in education management. according to Suryosubroto (2020:45) "Productive teacher work culture is behavior that is closely related and has an influence on student development and the quality of school education in achieving the desired goals."

The principal of the MIN Banda Aceh City school, apart from implementing the soft skills strengthening program, also carries out routine supervision and evaluation of the learning

process through teacher supervision activities. Teacher supervision is carried out to determine the development of teachers' soft skills in teaching. The benchmarks for the success of good quality education are the development of student learning outcomes and the continuously increasing level of public trust in schools, so that teacher soft skills are very important for every teacher to achieve learning success and quality education.

2) *School Principal's Strategy for Improving Digital-Based Teacher Capabilities in MIN City Banda Aceh*

The results of the research show that the strategies used by school principals to improve digital-based teachers' abilities are through providing motivation, directing the principal to teachers, through supervision, developing management teams, integrating technology in learning, through innovation and creativity, through education and training. Digitally based, as well as through annual and monthly meetings held directly by the school principal. The meeting was chaired by the school principal and attended by all teachers, school supervisors, and the KKG chairman. This is done so that teachers who are less professional in digital-based learning can develop better in order to improve teacher abilities.

The first strategy is to provide motivation. The principal provides direction and encouragement to be able to plan learning well. For teachers whose planning was not good, it turned out that the principal also gave directions by calling the teacher. The next strategy is to hold and involve teachers in education/training, workshops, seminars, education and training. Teachers are also given permission to take part in training, training or workshops held by other institutions, for example the government department. The school principal always collaborates with supervisors, school committees and school personnel in solving these problems, using good management consisting of planning, organizing, implementing and supervising.

The planning carried out at MIN Banda Aceh City is by holding annual and monthly meetings aimed at evaluating the results of previous work to get better results in the next school year, and can share solutions planned by school principals, supervisors, teachers and related parties for the sake of increasing digital-based teacher capabilities.

The principals at both MINs have formulated a vision and mission as a direction for developing the School Work Plan program properly, developing management teams, integrating technology in learning, through innovation and creativity, workshops, training to improve teacher performance, and holding MGMP programs and other programs. The school principal has also completed the program with a plan for evaluating the program's implementation and achievements and has not forgotten that the school principal must be able to create a good school culture and climate that supports the implementation of digital-based learning.

The organization formed by the school principal and his team also makes it very easy for each educational staff to carry out their duties in accordance with the position they are responsible for. This structure can also make it easier for other people outside the school to know who is responsible for each

field in the school, so that later they can also help supervise the principal in managing the school, especially the principal's ability to improve teacher performance.

Meanwhile, school level supervision is controlled directly by the school principal as leader by establishing policies and carrying out supervision and guidance both directly and indirectly. Meanwhile, in the classroom the implementation is left to the task of a teacher. One function of the management system that cannot be eliminated is the supervisory function. According to Hamalik (2019: 139) the control function includes: "Activities of providing a reporting system that is compatible with the overall reporting structure, developing behavioral standards, measuring results based on the desired quality in relation to objectives, carrying out corrective actions and providing rewards." Supervision is carried out to achieve the desired goals. The principal's management in improving digital-based teacher capabilities at MIN Banda Aceh is controlled directly by the principal and assisted by curriculum development staff.

In accordance with the data presented above, it was found that the process of supervising school principals in improving the abilities of digital-based teachers at MIN Banda Aceh was carried out directly or indirectly. Directly is through coaching carried out by the school principal, while indirectly is by looking at the results of evaluations held before making plans for the coming year. So, with supervision, it is hoped that there will be a positive school organizational climate and all school programs can be implemented effectively and efficiently.

3) *Supporting and Inhibiting Factors for School Principals in Improving Digital-Based Teacher Capabilities in MIN Banda Aceh City*

The research results show that supporting factors for school principals in improving the abilities of digital-based teachers in MIN Banda Aceh City are because the ability to lead a good school principal will be able to improve teachers' abilities, the high enthusiasm or enthusiasm of teachers can enrich themselves with new knowledge, gain experience and extraordinary benefits after participating in the training provided by the school principal. So, if the school principal often holds training for teachers, the competency of each teacher will increase and the quality of teachers in using digital media will be better and of better quality.

A supporting factor in increasing teacher capabilities is that the school principal always pays attention and provides learning tools and media. Such as books that are in accordance with the independent curriculum, then the availability of laptops to make it easier for teachers to create learning tools and make the learning process more interesting and displayed with projectors. So in the development of learning media, efforts should be made to take advantage of the advantages of the media and try to avoid obstacles that may arise in the learning process.

Meanwhile, the inhibiting factor for school principals in improving digital-based teacher capabilities in MIN Banda Aceh City is that the ability of teachers in MIN Banda Aceh City is already going well but still needs to be improved.

There are several obstacles in improving the abilities of teachers in MIN Banda Aceh City, including: lack of teacher motivation, and training schedules that are difficult for teachers to attend, lack of facilities and infrastructure capable of supporting the implementation of digital-based teacher capacity building.

One of the superior programs for increasing digital-based teacher capabilities is the teacher training program and teacher participation in KKG activities, which are always programmed every year, but do not run effectively due to time constraints and lack of transportation funds for teachers. Moreover, there are more than two teachers who take part in training activities and KKG in one semester. Some teachers do not want to be sent to take part in training due to lack of support from the family to take part in the training, problems with rank management, overlapping assignments/responsibilities given, many of the teachers are elderly, IT mastery factors, and so on.

B. Normality test

The normality test is used to evaluate whether the data shows a distribution pattern that corresponds to a normal distribution, and in this study the Kolmogorov test will be used. The purpose of the normality test is to determine whether the data sample comes from a population that has a normal distribution or not. Data that is considered suitable for analysis in this research is data that has a distribution that is close to normal. The assumption underlying the use of this test is that if the significance value of the test exceeds 0.05, it can be concluded that the residual value follows a normal distribution. Conversely, if the significance value is less than 0.05, it can be concluded that the residual value does not follow a normal distribution. Normality test results can be seen in table 4.

TABLE V
 NORMALITY TEST

Data	Competence	Standard Deviation	SPSS data		Conclusion
			Sig	A	
Pretest	Teacher Ability	10,947	,456	0.05	Normal
Posttest	Teacher Ability	11,983	,630	0.05	Normal

Based on table 5, the data obtained from the normality test calculation is normally distributed. This can be proven by the results of the significance value or sig (2-tailed) > 0.05. So from the value of the output it can be concluded that the data used is stated to be normally distributed.

C. Homogeneity Test

The homogeneity test aims to determine whether the level of variation in the data is the same or not. In this research, the data that will be tested for homogeneity is pretest and posttest data, which will then be analyzed using SPSS 25.0 software using the Levene statistical formula. Decisions regarding data homogeneity are based on the significance value of the test results. If the significance value is greater than 0.05, it can be concluded that the variation between the samples in the study is homogeneous. The results of homogeneity test calculations

using the Levene formula in SPSS 16.0 software can be found in Table 5.

TABLE VI
 HOMOGENEITY TEST

Levene Statistics	Df1	Df2	Sig
2,145	4	12	,165

Based on table 5, it shows that the significance level in the homogeneity test calculation is 0.165. The sample criteria can be said to be homogeneous if the significance level is > 0.05. From table 5, the results obtained are 0.165 > 0.05, so it can be concluded that the samples used in this research are homogeneous.

D. Descriptive Statistical Test

Descriptive statistics is a method of statistical analysis that presents a general description of the characteristics of each research variable, including the average (mean), maximum and minimum values.

TABLE VII
 DESCRIPTIVE STATISTICAL TEST

Descriptive Statistics					
Class	N	Max	Min	Mean	Std Deviation
Pretest	8	80	59	69.5	7.04859
Posttest	8	95	69	82	8.85930
Valid N	8				

From the data in the teacher pretest results table above, it can be seen that the pretest average is 69.5 and the posttest is 82. So the difference between the two is 12.5. This proves that the principal's management has had a significant influence in the form of increasing digital-based teacher capabilities.

1) T test

To find out whether the principal's management is effective in improving digital-based teacher capabilities, an effectiveness test was carried out using the t test. The t test results can be seen in the following table.

TABLE VIII
 RESULTS OF THE T TEST

t-Test Results	Significance
of the Independent Sample Test	0.002

Based on the results of the hypothesis test, the significance level obtained from the t-test indicates a value of 0.002, which falls below the threshold of 0.05. This statistical finding strongly suggests that the management practices implemented by school principals are effective in enhancing the capabilities of teachers in digital-based environments. Consequently, this evidence reinforces the notion that effective school principal management plays a crucial role in equipping teachers with the necessary skills to thrive in an increasingly digital educational landscape.

E. N-Gain Test

Normalized gain or N-gain score is designed to determine the percentage increase in digital-based teacher abilities. The N-Gain test results are presented as follows.

TABLE IX
 N-GAIN TEST RESULTS

No.	Indicator	N-Gain Score	Categories
1.	the role of digital technology in increasing the effectiveness of learning in the classroom	0.73	High
2.	digital-based teacher capabilities can increase student engagement in learning and facilitate differentiation of instruction	0.69	Medium
3.	design for developing technology-based media or teaching materials	0.70	High
Mean		0.70	High

From the table presented, it can be seen that overall, principals' management was able to improve teachers' digital skills by 0.70, which is in the high category. This indicates a substantial improvement in teachers' digital skills, reflecting the positive impact of the intervention implemented by the principal on teachers' professional development. The managerial strategies implemented were not only effective, but also had a significant influence in equipping teachers with the necessary skills to teach in the digital era. Therefore, it can be concluded that principals' management plays an important role in improving teachers' digital capabilities, which in turn can contribute to the overall quality of education.

IV. DISCUSSION

The results of the research above show that school principal management is effective in improving digital-based teacher capabilities. The t test shows a significance level of 0.002, confirming the effectiveness of school principal management in improving teacher abilities. The N-Gain test shows an increase in digital-based teachers' abilities of 70% in the high category, concluding that the principal's management has succeeded in increasing teachers' abilities significantly. The results of this research support previous research conducted by Puspitasari (2021) which showed that the principal's management influences teacher performance. Research conducted by Suyitno (2021) shows the results that there is a positive and significant influence between the managerial skills of school principals on the effectiveness of SBM. Through effective leadership, school principals are able to create a work environment that supports professional growth and teacher skill development. By providing necessary training, workshops and resources, school principals enable teachers to continuously improve their teaching abilities, including the ability to use technology and innovative learning methods (Falloon, 2020; Karakose, Polat, & Papadakis, 2021; Ovcharuk, Ivaniuk, Soroko, Gritsenchuk, & Kravchyna, 2020).

In addition, school principals also play a role in providing motivation, direction and support to teachers, which directly influences their level of motivation and performance (Bektaş, Kılınc, & Gümüş, 2020; Hartinah et al., 2020; Saleem, Aslam, Yin, & Rao, 2020). Through ongoing supervision and evaluation, principals can identify teachers' individual needs and develop strategies to help them reach their full potential. Thus, effective principal management not only directly improves teacher capabilities, but also has a positive impact on the quality of learning, student achievement and the overall reputation of the educational institution (Merkt, Werner, & Wagner, 2017; Park, Lee, & Cooc, 2019; Spiegel, 2019).

Implementation of Principal Management in Increasing Digital-Based Teacher Capacity in MIN Banda Aceh City has been carried out through several strategic stages. First, the programs implemented by school principals include digital training, digital-based seminars, workshops, digital-based KKG, giving rewards, and broad access for teachers to use technology. The aim is to determine teachers' abilities and expertise and provide motivation and appreciation for digital-based teachers' abilities. The school principal also coordinates with the coordinator of each grade level to increase cooperation in implementing the program. The strategy is carried out by providing motivation, direction, supervision, development of the management team, integration of technology in learning, innovation, training, and annual and monthly meetings. Supporting factors in increasing teacher capabilities are regular training and the availability of learning tools and media. However, several inhibiting factors include lack of teacher motivation, difficult training schedules, limited facilities and infrastructure, and obstacles to rank management which can hinder the effectiveness of the program. However, school principals continue to strive to overcome these obstacles so that digital-based teacher capacity building programs can run more effectively.

Principal management strengths include the ability to organize human resources, manage conflict, and motivate educational staff. As a leader, the principal is able to provide clear direction and inspire staff to achieve common goals. They also have expertise in managing school time and budgets efficiently, and are able to identify and overcome challenges that arise in the educational environment. Additionally, principals typically have extensive networks within the educational community, allowing them to access additional resources and collaborative opportunities that benefit the school. With strong and strategic leadership, school principals are able to create a climate that is conducive to teacher professional growth and improve the overall quality of learning. So, based on the discussion above, school principal management activities can be an alternative solution in improving digital-based teacher capabilities.

V. CONCLUSION

The research results show that effective principal management has a positive impact on improving digital-based teacher capabilities. The t test confirms the effectiveness of the principal's management with a significance level of 0.002, while the N-Gain test shows an increase in teacher ability of

70% in the high category. These findings support the results of previous research which shows the positive influence of principal management on teacher performance. Through effective leadership, principals create a work environment that supports teachers' professional growth by providing necessary training, workshops, and resources. They also provide motivation, direction, and support to teachers, as well as conduct ongoing supervision and evaluation to identify individual teacher needs. The implementation of school principal management in MIN Banda Aceh City involves various programs such as digital training, seminars, workshops and annual meetings to improve digital-based teacher capabilities. Even though there are several inhibiting factors such as lack of teacher motivation and limited facilities and infrastructure, school principals continue to strive to overcome these obstacles so that teacher capacity building programs can run more effectively. Thus, effective principal management not only improves teachers' abilities directly, but also has a positive impact on the overall quality of learning and student achievement. Limitations of this study include the focus on one region, namely Banda Aceh City, which may limit the generalizability of the findings. The data collection methods used, such as interviews and tests, are also limited and may cause bias. In addition, this study did not consider external factors that may affect teachers' skills. For future research, it is recommended that researchers conduct the study in multiple locations, use more diverse methods such as surveys or observations, and consider other variables that may affect teacher proficiency.

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