

The Influence of Principal Transformational Leadership and Teacher Digital Literacy on High School Teacher Professionalism

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ABSTRACT

Teachers are the main factor that determines the results of the educational process so teachers are required to have professionalism to master science and technology. Teacher professionalism is influenced by several factors, namely the principal's leadership and teacher digital literacy. This research aims to determine the influence of the variables (1) the principal's transformational leadership on teacher professionalism, (2) teacher digital literacy on teacher professionalism, and (3) the principal's transformational leadership and teacher digital literacy together on teacher professionalism. The research population was State High School teachers in Pinggir District, Bengkalis Regency, totaling 175 people and the research sample was 122 people. This research approach is a quantitative approach with data collection carried out by distributing questionnaires as a research instrument. The data analysis used is descriptive, inferential statistical analysis, and hypothesis testing. The instrument reliability coefficient is calculated using the *alpha-Cronbach formula*. The research results show that there is a positive and significant influence between the principal's transformational leadership on teacher professionalism by 51.40%, and there is a positive and significant influence between teacher digital literacy and teacher professionalism by 53.50%. Simultaneously, the combined effect of the principal's transformative leadership and teacher digital literacy on teacher professionalism is both positive and substantial, accounting for 55.80%. This study suggests that the principal's use of transformational leadership and digital literacy has an impact on teacher professionalism.



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1. INTRODUCTION

Education is an effort to create quality human resources to support national development. Many components influence the educational process, including educators, students, infrastructure, and society. Teachers are the main factor that determines the results of an educational process and teachers are a unique profession because they have so many competencies in carrying out their duties to prepare future

generations. Teachers must be able to design or organize various resources and facilities available for students to use or utilize in learning something.

Teachers are the main factor that determines the results of an educational process, and teachers are a unique profession because they have so many competencies to carry out their duties in preparing future generations (Novita & Sulaiman, 2022). Teachers must be able to design or organize various resources and facilities available for students to use or utilize in learning something. Teachers must have competence as educators who play an important role in the learning process so that what is conveyed can be well received by students. The work of a teacher is seen as a profession because it must be obtained through an educational process with certain qualifications to have expertise, skill, and proficiency and be entitled to earn an income or salary.

Professional teachers are teachers who have the competencies needed to carry out educational and teaching tasks. Competence includes knowledge, attitudes, and professional skills, both personal, social, and academic. Teacher professionalism is defined as the way, conditions, direction, and quality of work as well as the way of thinking of a teacher in applying his knowledge and skills related to his profession which is his livelihood in the field of education and teaching. Teacher professionalism in the 21st century requires a new paradigm to create a professional profile for Indonesian teachers who only have the skills to inspire students to master science and technology. In a similar vein (Basri & Akmaluddin, 2020) states that teacher professionalism can be seen from the teacher's ability and contribution in disseminating his findings to various media that other people may use, using new technology in learning, and utilizing information technology as a tool. Communication facilities and learning support facilities.

The indicators of teacher professionalism include 1) mastering the material, structure, concepts, and scientific mindset that supports the subjects taught 2) developing the curriculum 3) developing the subjects taught creatively, 4) developing professionalism continuously by carrying out reflective actions, 5) utilize information and communication technology to communicate and develop themselves. Al Faruq, MH, & Supriyanto, S. (2020) stated that teachers are said to be professional if they can plan, implement, and evaluate learning.

In this digital era, teachers are also required to be able to keep up with the times and advances in technology, information, and communication. The use of digital technology in learning is a very useful solution so that the learning process continues to run well. Digital literacy among educators is a very important issue in education today. Educators only started using this application after the pandemic, even though the new all-digital technology used to support education has been developing since two decades ago. Only a few teachers have integrated it into the teaching and learning process. Kusumawati, H., et al. (2022) state that digitalization or digital literacy is very important and has an impact on increasing teacher professionalism in carrying out the teaching and learning process. The impact of digital literacy in increasing teacher professionalism is that it makes it easier for teachers to carry out learning, makes it easier to access and obtain correct and appropriate learning resources, and allows teachers to create digital-based learning media (Kusumawati H. et al., 2022).

At this time, teachers are required to have the ability to optimize the use of communication media and technology to obtain, collect, and process information for use in teaching and learning activities. With digital literacy, teachers can direct students to sort information that is correct and useful for themselves. Teachers must be able to keep up with advances in digital technology. Strengthening digital literacy is carried out to meet educational needs in the era of Industrial Revolution 4.0 by preparing professional teachers al. Educators in the era of Revolution 4.0 still have technology fever where they are afraid of using the wrong media components, afraid of being disturbed by electrical short circuits, and afraid of damaging the tools or media used in the learning process (Wiyani, 2020). Teachers, as the main factor driving the learning process in the classroom, should have high professionalism in carrying out their duties.

Teachers, as an important factor in education and occupying professional positions, must always improve their work professionalism to solve existing problems (Dwijayanti & Sari, 2021). Teachers should update their knowledge with the latest knowledge in compiling teaching materials and learning media, which can be obtained via the internet, as well as through training and MGMP activities. Professional teachers should also follow developments in the existing curriculum because new policies often emerge regarding improving curriculum content, such as increasing Core Competencies, Basic Competencies, assessment systems, etc.

During the Distance Learning (PJJ) and Limited Face-to-Face Learning (PTMT) processes to communicate with students both in the guidance process and in providing learning materials and assignments, teachers often use WhatsApp because this application is the easiest and most familiar to use. While using digital applications such as Google Classroom, Zoom, Google Meet, Quizizz, and several other applications, many teachers are still unable to operate them properly. When using an application or teaching platform, the teacher is accompanied by another teacher or computer technician who better understands its use.

Teachers must innovate in learning, and make changes in the educational process so that learning is more meaningful and student-centered. This is reinforced by Handayani and Abdul (2020) who state that mastering learning-related applications better known as digital literacy, is a new challenge for teachers to remain professional in implementing learning. Apart from that, the number of honorary teachers (131 people) is greater than the number of teachers with ASN status (44 people). or the need for promotion. The teacher's understanding of developments in technology and communication or digital literacy will have an impact on the teacher's ability to carry out learning. This means that teachers with good digital literacy will increase professionalism in their work, as well as make it easier for teachers to carry out learning using technology. Iqbal Muhammad (2020) states that teachers' digital literacy abilities will influence teachers' professional competence.

Teacher digital literacy is the teacher's ability to use technology and digital media, communication tools, or networks effectively to search, evaluate, use, create information, disseminate knowledge, and utilize it wisely in the process of teaching, educating, evaluating, assessing, guiding, and managing participants. Students in the learning process and developing teachers themselves, all of which are summarized to realize and improve teacher professionalism. Indicators of teacher digital literacy are 1) the level of teacher understanding in using digital media and the internet, 2) the use of digital technology as additional learning resources, 3) the use of digital technology for digital technology-based learning media, 4) for student supervision, 5) for access information quickly, 6) for school promotion, 7) publish work and information (Rohmah, 2019).

Teacher professionalism at work is influenced by various factors, both from the teacher himself and encouragement from outside the teacher. Teacher professionalism which is related to teacher performance in carrying out their duties, is influenced by the teacher's mental attitude in the form of work motivation, work discipline, work ethic, work management, and principal leadership. Principal leaders who have the characteristics, skills, and abilities to lead schools and trained teachers will improve teacher performance (Nizar & Hasnah, 2018). Teacher professionalism is determined by the school principal's leadership style in managing the institution.

Based on observations made by researchers, it was found that the principal's leadership did not encourage teachers to develop themselves and did not provide individual attention because the principal was busy with official activities outside the school or busy with the principal's administrative duties, the lack of concern for teachers would affect work motivation. Teachers and this will have an impact on teacher work motivation affecting teacher professionalism.

One form of principal leadership is transformational leadership. The principal's transformational leadership has a very good influence on teacher professionalism with the strategy and application of the principal's transformational leadership elements through activities that lead to the development of quality

teachers, providing encouragement and guidance to teachers and education staff, as well as paying attention to the factors. which supports and hinders school principals in improving their professionalism. In increasing the professionalism of head teachers as leaders in schools, several activities can be carried out, namely providing opportunities and motivating them to take part in training or training, joining teachers in certification programs, allowing teachers to continue their studies, collaborating with other agencies or schools, and carrying out *Benchmarking*, (Ariyani, R., 2017).

Referring to the background above, researchers found that several factors influence teacher professionalism, including education and training, educational background, supervision or control, principal leadership, motivation, welfare, work ethic, and digital literacy (Titin, 2011). In this research, the researcher will discuss two factors that influence teacher professionalism, namely leadership which is specific to transformational leadership and digital literacy. This research aims to examine the influence of digital literacy on teacher professionalism, the influence of transformational leadership on teacher professionalism, and the influence of transformational leadership and digital literacy on teacher professionalism.

2. METHOD

This research uses quantitative research methods with the *Ex post-fact type*. The population in this study were State High School teachers in Pinggir District, Bengkalis Regency, totaling 175 teachers with a sample of 122 teachers spread across 6 State High Schools in Pinggir District. The data collection technique used was a *questionnaire* distributed using *Google Forms*. A questionnaire is a data collection technique that is carried out by giving a series of questions or written statements to respondents to answer. The questionnaire in this research consists of statement items related to the principal's transformational leadership, teacher digital literacy, and teacher professionalism. Research data was analyzed using the SPSS (Statistical Package for Social Science) program version. 23. The technique used to analyze data is inferential statistical analysis, which consists of testing classical assumptions and research hypotheses. The Classic Assumption Test consists of the Normality Test and Linearity Test. Meanwhile, hypothesis testing consists of the F test, regression test, and determinant test.

3. FINDINGS AND DISCUSSION

3.1 Research result

3.1.1 Hypothesis 1

After testing the analysis requirements, correlation tests and regression tests are then carried out, presented in Table 1 below:

Table 1. Coefficient Linear Regression of Principal Transformational Leadership (X_1) on Teacher Professionalism (Y)

Model	B	Q	signature
Constant	6,836	0.747	0.456
Key Leadership	0.762	11,267	0,000

Constants $a = 6.836$ and $b = 0.762$ then the regression equation formed is $Y = 6.836 + 0.762X_1$. The meaning of the regression equation is that the constant value (a) is 6.836, meaning that if the principal's transformational leadership is equal to zero, then the teacher professionalism value is 6.836. The regression coefficient (b) is 0.762, meaning that for every increase in the principal's transformational leadership by one unit, it will also be followed by an increase in teacher professionalism by 0.762 one unit.

From the table of the principal's transformational leadership coefficient (X_1) on teacher professionalism (Y), the probability value is sig. of 0.000. signature. Value $0.000 < 0.05$, then H_0 is

rejected, and H_1 is accepted so that the principal's transformational leadership (X_1) has a significant effect on teacher professionalism (Y).

Table 2. Results Testing Strength

Correlation coefficient	Square Coefficient	Percentage	Correlation Coefficient Squared Settings	Estimate Standard Error
0.717	0.514	51.4%	0.510	2,512

Coefficient is 0.717 so it is known that the determination value (r^2) of the principal's leadership (X_1) on teacher professionalism (Y) is 0.514 or 51.4%, meaning that the principal's transformational leadership has a large influence on teacher professionalism (Y). an influence of 51.4% on teacher professionalism.

The hypothesis stated previously that there is a positive and significant influence between the principal's transformational leadership (X_1) on teacher professionalism (Y) at Pinggir State High School, Bengkalis Regency is accepted.

3.1.2 Hypothesis 2

The test and regression between teacher digital literacy (X_2) and teacher professionalism (Y) can be seen in Table 3 below:

Table 3. Coefficient Linear Regression of Teachers' Digital Literacy (X_2) Towards Teacher Professionalism (Y)

Model	B	Q	signature
Constant	15,203	1,888	0.061
Teacher Digital Literacy	0.772	11,760	0,000

Constants $a = 15.203$ and $b = 0.772$ then the regression equation formed is $Y = 15.203 + 0.772X_2$. The meaning of the regression equation is that the constant value (a) is 15.203, meaning that if the teacher's digital literacy is equal to zero then the teacher's professionalism value is 15.203. The regression coefficient (b) is 0.772, meaning that for every one-unit increase in teacher digital literacy, it will also be followed by an increase in teacher professionalism of 0.772 one unit.

From the table of teacher digital literacy coefficient (X_2) on teacher professionalism (Y), the probability value sig is also obtained. of 0.000. signature. value $0.000 < 0.05$ then H_0 is rejected and H_1 is accepted. It was concluded that teacher digital literacy (X_2) had a significant effect on teacher professionalism (Y).

Table 4. Results Teacher Digital Literacy Test (X_2) Towards Teacher Professionalism (Y)

Correlation coefficient	Squared Coefficient	Percentage	Correlation Coefficient Squared Settings	Standard error estimates
0.732	0.535	53.5%	0.532	2,456

Amounting to 0.732, it is also known that the determination value (r^2) of teacher digital literacy (X_2) on teacher professionalism (Y) is 0.535 or 53.5%, or teacher digital literacy has an effect of 53.5% on teacher professionalism. So based on the hypothesis stated previously that there is a positive and

significant influence between teacher digital literacy (X₂) on teacher professionalism (Y) at State High Schools in Pinggir District, Bengkalis Regency, it is accepted.

3.1.3 Hypothesis 3

Testing the third hypothesis is that there is a significant influence between the Principal's Transformational Leadership (X₁) and teacher Digital Literacy (X₂) on Teacher Professionalism (Y) which is carried out using the F test as in Table 5 below:

Table 5. F Test Calculate Leadership Coefficient Head Transformation School (X₁), Teacher Digital Literacy (X₂) Against Teacher Professionalism (Y)

Model	Variable	Count	Ftable	signature
1	Regression (Principal Transformational Leadership, Teacher Digital Literacy on Teacher Professionalism	83,795	3,072	0,000

Based on Table 5, the value is known with $F_{count} > F_{table}$ and $sig\ 0.000 < 0.05$. So it can be concluded that leadership transformational head school (X₁) and teacher digital literacy (X₂) simultaneously significantly influence significant to professional teachers (Y), so the third hypothesis is accepted. Variable correlation and regression tests leadership transformational head school (X₁), teacher digital literacy (X₂) on teacher professionalism (Y) can be seen in Table 6 below:

Table 6. Coefficient Regression Leadership Head Transformation School (X₁), Teacher Digital Literacy (X₂) Towards Teacher Professionalism (Y)

Model	B	Q	signature
Constant	0.259	0.030	0.976
Ultimate Transformational Leadership	0.390	3,760	0,000
Digital Literacy Teacher	0.464	4,502	0,000

From Table 6, the constant values are obtained (a) = 0.259, b₁ = 0.390, and b₂ = 0.464. The regression equation formed is as follows:

$y = 0.259 + 0.390X_1 + 0.464X_2$. The meaning of the regression equation is that the constant value (a) is 0.259, meaning that if the principal's transformational leadership and teacher digital literacy are equal to zero, teacher professionalism is 0.259. The regression coefficient for school principal leadership (b₁) is 0.390, meaning that every increase in principal leadership by one unit will also be followed by an increase in teacher professionalism by 0.390 by one unit, assuming the teacher digital literacy variable remains constant. The teacher digital literacy coefficient (b₂) is 0.464, meaning that for every one-unit increase in teacher digital literacy, there will also be an increase in teacher professionalism by 0.464 one unit, assuming the principal's transformational leadership variable remains constant.

To determine the influence of the principal's transformational leadership variables (X₁) and teacher digital literacy (X₂) together on teacher professionalism (Y) can be seen in Table 7 below:

Table 7. Coefficient Correlation And Determination (r^2) Leadership Transformational Head School (X_1), Teacher Digital Literacy (X_2) Towards Teacher Professionalism (Y)

R	R square	Percentage	Correlation Coefficient Squared Settings	Standard error estimates
0.747	0.558	55.8%	,550	2,406

The calculation results regarding the strength of the relationship between the principal's transformational leadership (X_1) and teacher digital literacy (X_2) on teacher professionalism (Y) are shown by a correlation coefficient of 0.747 and the strength of this relationship is shown by a determination coefficient of 0.558.

Based on Table 7, *R square* (r^2) = 0.558 or 55.80%, meaning that the influence of the principal's transformational leadership variable and teacher's digital literacy on the professionalism of Pinggir District Teachers' High School is 55.80% while the remaining is 44.20% again. influenced by other factors that are not part of this research. Thus, it can be concluded that the hypothesis that there is a positive and significant influence of the principal's transformational leadership variable and teacher's digital literacy on teacher professionalism is accepted.

3.2 Discussion

3.2.1 Hypothesis 1

Based on the research results, it is known that the principal's transformational leadership has a significant influence on teacher professionalism (Y) at Pinggir District High School, which has a large influence of 51.40% with a fairly strong interpretation because there is still 48.60% determined. by other factors that are not part of this research. This influence is reflected in every one-unit increase in the principal's transformational leadership variable (X_1), which will be followed by an increase in teacher professionalism (Y) of 0.762 one unit. Nurdin (2013), with the results of his research that the transformational leadership of school principals influences teacher professionalism in realizing learning behavior and achievement. The principal's transformational leadership can influence teachers or educators in school development. The principal's leadership also influences teacher professionalism because it relates to how teachers demonstrate the skills needed to carry out the teaching and learning process.

Adzkie (2020) states that the transformational leadership of the school principal determines teachers who have professional commitment. Leaders have a big role in realizing teacher professionalism. School principals who can communicate well between leaders and subordinates can provide motivation and guidance to teachers, as well as listen to complaints and obstacles faced by teachers in achieving targets so that teachers feel they own the school, making school a part of their life can increase teacher professionalism in carrying out their work. Transformational style leaders are needed in schools to increase teacher professionalism. The school principal is responsible for renovating the school culture to meet stakeholder demands (Wijayanti, 2022). Transformational leadership is a leadership model that focuses leadership on new rules, a new vision of reality, updating employee attitudes, and making fundamental changes to the school's organizational culture.

The principal's transformational leadership is the principal's ability to change the environment, patterns, values, and work motivation of teachers so that they can optimize their performance and professionalism to achieve school goals. School principals must always improve their ability to lead so that they can have a positive influence, and educate and motivate teachers so that they can increase teacher professionalism. To increase teacher professionalism, school principals also need to develop school programs regarding teacher professional development and development.

3.2.2 Hypothesis 2

The research findings indicate a significant correlation between teacher digital literacy (X2) and teacher professionalism (Y) at Pinggir District Public High School. The influence of teacher digital literacy on teacher professionalism is substantial, accounting for 53.50% of the variance. However, it should be noted that 46.50% of the variance is attributed to other factors. Excluded from this study. The impact of this influence may be observed in the relationship between the teacher's level of digital literacy (X2) and their level of professionalism (Y). Specifically, for every one-unit rise in the teacher's digital literacy, there is a corresponding increase of 0.772 units in their professionalism. According to Iqbal (2020), instructors who possess strong digital literacy abilities and are able to effectively use them in the learning process would enhance their professional competency. Activities carried out by the school include making learning modern, holding training, providing knowledge about digital literacy challenges to teachers, using IT-based media in learning and activities held at school, and conducting Classroom Action Research regarding the use of communication technology in learning.

Then Lismawati's research (2022) states that increasing digital literacy to realize the professional performance of teachers in the Industrial Revolution 4.0 era is an effort to solve the problems that exist in the world of education today, especially those related to the world of education. competent teacher. Teachers need to acquire digital skills to face today's education so that they can carry out their duties as professional teachers. Therefore, teachers who have strong literacy and digital skills can carry out their duties optimally and professionally and are ready to face education in the era of the Industrial Revolution 4.0.

Professional teachers develop their abilities by following technological developments. Utilize communication technology to manage learning, create and disseminate new knowledge, and assess learning outcomes so that the learning process becomes more interesting and does not become outdated. There is a need to increase teacher digital literacy to support teacher work in developing the learning process as well as for the teacher's development. Mastering digital literacy will provide space for teachers to work better it will increase teacher professionalism.

3.2.3 Hypothesis 3

In the third hypothesis, it was found that the principal's transformational leadership (X1) and teacher digital literacy (X2) influenced teacher professionalism (Y) by 55.80% with a fairly strong interpretation, and the remaining 44.20% was determined by other factors. Which was not part of this research. Then, based on the results of $F_{count} = 83.795 > F_{table} = 3.072$ with a significance level of 0.05, H_a is accepted which explains that the principal's transformational leadership (X1) and teacher digital literacy (X2) jointly influence teacher professionalism (Y) by quite strong influence.

The ability of teachers to master digital literacy in the era of Industrial Revolution 4.0 in carrying out their duties can improve the performance of teachers and teaching staff in carrying out their duties optimally (Lismawati, 2022). Appropriate policies and support from school leaders or principals in conducting digital literacy training for teachers will support the development of teachers' digital literacy competencies, thereby increasing teacher professionalism.

Furthermore, research was conducted by Puspitaningyas et al. (2019). This research used a literature study method and obtained the results that with the changes in the industrial revolution, school principals 4.0 should improve the professional quality of their teaching staff so that they can master information technology and carry out supervision activities to find out the strengths and weaknesses of teachers. Teacher in carrying out tasks.

Another research conducted by Tri Lindawati and Muhammad (2021) showed that school principals can carry out training and non-training strategies to increase teacher professionalism regarding mastery of information technology, including a. developing ICT in schools, b. provide guidance and coaching to teachers who cannot and do not understand technology, c. carry out

evaluations to find out weaknesses in the results of coaching and educational staff. The leadership style of transformational school principals must always be creative and innovative in developing literacy culture programs to improve teachers' skills in making technology-based learning media which was previously considered difficult to make and requires special skills in the field of computers, something that can be done by teachers. to add references in the learning process, (Wulandari, et al (2022).

Based on the research above, it can be seen and concluded that the transformational leadership of school principals and the digital literacy of state high school teachers in the Pinggir sub-district have a positive influence on the professionalism of state high school teachers in the Pinggir sub-district. - District, Bengkalis Regency.

4. CONCLUSION

This means that teacher professionalism in carrying out their duties as good educators and teachers can be determined by teacher transformational leadership and digital literacy. Teacher professionalism can be seen from the teacher's responsibility in carrying out his duties, being creative and innovative, liking challenges, and being far-sighted and independent in acting. Teacher professionalism can be determined by the leadership style applied by school leaders and the teacher's digital literacy skills. The better the principal's transformational leadership and the greater the teacher's digital literacy, the better the teacher's professionalism at work will be, and vice versa.

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