



## Analysis of the head of Madrasah Leadership Style, Teaching Methods, Teacher Competence, Learning Strategies Towards Student Quality in the Industry 4.0 Era Madrasah Aliyah (MA) Tapin Regency, South Kalimantan

Fauziannor<sup>1</sup>, Abdul Kadir<sup>2</sup>, Melania<sup>3</sup>, Fredy Jayen<sup>4</sup>, Kamaruddin<sup>5</sup>

<sup>1,2,3,4,5</sup>Pancasetia College of Economics Banjarmasin

**ABSTRACT:** The aim of this research is to analyze and prove the simultaneous and partial influence of the madrasa head's leadership style, learning methods, teacher competence, learning strategies on student quality in the industrial era 4.0 at Madrasah Aliyah (MA) Tapin Regency. The approach to this research is quantitative research, namely research that focuses on studying objective phenomena to be studied quantitatively. The sample taken in this study used a total sampling technique of 47 people consisting of 3 heads of Madrasah Aliyah in Tapin Regency, 44 certified civil servant teachers. Data collection techniques use questionnaires, documentation, interviews and observation. Validity and reliability tests were carried out on the research instruments. Data were analyzed using multiple linear regression analysis with classical assumption tests. The results of the research show that simultaneously the leadership style of the madrasa head, learning methods, teacher competence, and learning strategies have a significant effect on the quality of students in the industrial era 4.0 at Madrasah Aliyah Tapin Regency. Partially, the leadership style of the madrasa head, teacher competency and learning strategies have no significant influence on the quality of students in the industrial era 4.0 at Madrasah Aliyah Tapin Regency, but learning methods have a significant influence on the quality of students in the industrial era 4.0 at Madrasah Aliyah Tapin Regency.

**KEYWORDS:** Leadership Style, Learning Methods, Learning Strategies, Student Quality, Teacher Competence.

### INTRODUCTION

The curriculum changes at the high school level need to be accompanied by adequate training and mentoring for teachers to master the new curriculum and implement appropriate teaching methods. The leadership of the school principal is crucial in organizing these training sessions and providing sufficient support.

In the context of improving the quality of human resources, especially teachers, it is also important to pay attention to aspects of personality, professionalism, and entrepreneurship. Teachers need to have personal integrity, a willingness to continuously develop themselves, openness in carrying out tasks, and the ability to control themselves in facing problems. Managerial competence and transformational leadership also need to be enhanced, including in the management of change and the development of school human resources. Changes in education not only involve academic aspects but also personality and entrepreneurship. The school principal needs to play a role as a catalyst, creator, facilitator, and stabilizer in the change process. Support for teachers and students to develop non-academic talents also needs to be considered.

Furthermore, improving the quality of human resources in schools is not only the responsibility of the school principal and teachers but also involves families, communities, and government support. It is important to create synergy between various parties so that the goal of improving the quality of education can be optimally achieved. In facing the era of the fourth industrial revolution, the school principal needs to be a visionary agent of change and responsive to changes in the education sector. Enhancing teacher competence, utilizing technology, and developing learning strategies that align with the demands of the time need to be the focus in addressing these challenges.

In conclusion, to improve the quality of education in schools, changes need to be made in various aspects, including the curriculum, teaching methods, human resource development, and technology utilization. The school principal plays a central role in leading and supporting these changes, involving all relevant parties to achieve the goal of improving the quality of education.



Based on the background described above, the problem formulations that can be derived are:

1. Does the leadership style of the madrasah principal, teaching methods, teacher competence, and learning strategies simultaneously influence the quality of students in the era of Industry 4.0 at Madrasah Aliyah (MA) in Tapin Regency?
2. How do the leadership style of the madrasah principal, teaching methods, teacher competence, and learning strategies partially influence the quality of students in the era of Industry 4.0 at Madrasah Aliyah (MA) in Tapin Regency?
3. Among the leadership style of the madrasah principal, teaching methods, teacher competence, and learning strategies, which one has a dominant influence on the quality of students in the era of Industry 4.0 at Madrasah Aliyah (MA) in Tapin Regency?

## LITERATURE REVIEW

### a. *Human Resources Management (HRM) Concept*

Management fundamentally comes from the word "to manage," which means to organize. Management is the science and art of organizing the utilization of human resources and other resources effectively and efficiently to achieve a specific goal (Hasibuan, 2009:141). Management consists of six elements, namely, men, money, method, material, machines, and market.

Human Resource Management (HRM) is a management field that specifically studies the relationships and roles of humans within an organizational institution. The elements of HRM focus on humans as the workforce, thus concentrating solely on issues related to human labor. Human Resource Management is the art and science of acquiring, developing, and utilizing human resources to ensure that the goals of an institution are achieved efficiently and with enthusiasm (Manulang, 2014).

Humans require organizations, and conversely, organizations need humans as the driving force; without humans, organizations would not function. Similarly, the psychological potential possessed by employees in carrying out their work is abstract and has unclear boundaries. According to BA Setiono (2020), HRM is the science and art of organizing the relationships and roles of the workforce to effectively and efficiently assist in achieving the goals of the institution, employees, and the community.

### b. *Education Concept*

According to Ahmad D. Marribah, as cited by Abuddin Nata (2013:10), education can be interpreted narrowly and also broadly. In a narrow sense, it can be defined as "guidance given to children until they reach adulthood."

According to M. Natsir Ali, as cited by Abuddin Nata (2013:11), education in the broad sense is "everything related to the process of human development and growth, which is an effort to instill and develop values for students. Thus, the values contained in education become part of the child's personality, and in turn, they become a knowledgeable, good, capable individual who can live a useful life for society." According to Driyarkara, as cited by Nanang Fattah (2013:4), education is about humanizing young people. It involves elevating young individuals to the level of being educated.

According to Syed Naquib al-Attas, as cited by Abuddin Nata (2013:11), education originates from the word "ta'dib." Indeed, there is another word related to education besides ta'dib, which is tarbiyah, emphasizing nurturing, caring for, feeding, preserving, and promoting growth. Naquib further states that the emphasis on 'adab,' which encompasses ethical behavior in educational activities and the educational process, is to ensure that knowledge is used appropriately in society. For this reason, the wise of the past combined knowledge with action and ethical conduct, considering the harmonious combination of the three as education.

### c. *Madrasah Head Leadership Style*

The head of the madrasah plays a strategic role in improving the quality of the educational institution. According to Minister of Education and Culture Regulation Number 6 of 2018 regarding the Assignment of Teachers as Madrasah Heads, the position of school head is no longer an additional task but a primary duty. Article 1 paragraph (1) of Minister of Education and Culture Regulation Number 6 of 2018 defines the "Madrasah Head" as a teacher assigned to lead and manage educational units, including kindergartens, special kindergartens, elementary schools, special elementary schools, junior high schools, special junior high schools, senior high schools, vocational high schools, special senior high schools, or Indonesian Schools Abroad.

Minister of Education and Culture Regulation Number 6 of 2018 designates the school head as a full leader and manager of the madrasah, relieving them of teaching duties. This is intended to allow the madrasah head to focus on performing managerial tasks to enhance the school's quality. Article 15 paragraph (1) states that "The workload of the Madrasah Head is fully allocated to carry out managerial tasks, entrepreneurial development, and supervision of teachers and education personnel." Subsequently, paragraph (2) states that "The workload of the School Head as referred to in paragraph (1) aims to develop the school and improve the school's



quality based on the 8 (eight) national education standards."

As a leader, the madrasah head must lead and empower a group of educators and education personnel in the school to collectively achieve the school's vision and mission. There are five competencies they must possess, including (1) personality competency, (2) managerial competency, (3) entrepreneurial competency, (4) supervision competency, and (5) social competency. As a school manager, they must enhance the school's quality to achieve the 8 (eight) National Education Standards, which include (1) Graduation Standards, (2) Content Standards, (3) Process Standards, (4) Assessment Standards, (5) Teacher and Education Personnel Standards, (6) Management Standards, (7) Facility and Infrastructure Standards, and (8) Financing Standards. The school head manages various aspects, including (1) curriculum management, (2) management of educators and education personnel, (3) student affairs management, (4) facility and infrastructure management, (5) financial management, (6) admission of new students, (7) school environment management, and so on.

Referring to the above description, the role of a school head is indeed quite challenging. Nevertheless, a head with a clear vision will strive to lead and manage the school to the best of their abilities. Currently, becoming a school head involves various selection stages, starting from administrative selection, academic selection, to successfully completing school head candidate training.

Leadership involves a reciprocal stimulation between leaders and followers, transforming their abilities. Leadership is also a way and process of directing, guiding, and influencing followers to achieve goals. Therefore, leadership encompasses a position not only in front but also among and behind individuals (Kumala & Susanto, 2019). According to Syafarudin and Asrul, a school head functions as a leader, manager, educator, supervisor, and motivator for teachers in the educational process through teaching and training. In the learning process, teachers interact with each other and students. Communication patterns are also present in this interaction as the essence of humanitarian activities to develop the potential of students towards maturity in a broad sense so that they can play their roles in the social system (Wahyudin Nur Nasution, 2015).

#### *d. Learning Methods*

The term "metode" originates from the Greek word "metodos." It comes from the combination of "metha," meaning through or passing, and "hodos," which means path or way. In Arabic, the term for method is "thariqat," while in the Indonesian Dictionary, it is defined as a well-organized and well-thought-out way to achieve a purpose, traversed to present teaching materials to achieve teaching objectives (Syharsono and Ana Retnoningsih, KBBI, 2011: 574).

Learning, according to Dimiyati and Mudjiono as cited by Syaiful Sagala, involves the teacher's programmed activities in instructional design to make students learn actively, emphasizing the provision of learning resources (Syaiful Sagala, 2012: 42). Hamzah B. Uno defines learning methods as the ways teachers use to achieve learning objectives (Hamzah B. Uno, 2011: 2). Therefore, a learning method is the path a teacher takes to achieve learning objectives with specific stages.

Through effective learning methods, teachers can enhance the quality of students in both academic and non-academic fields. Learning methods constitute a systematic and organized process performed by teachers/strategies or tactics in conducting teaching and learning activities in the classroom to successfully achieve predetermined learning objectives (Aswan Zain, 2017: 7).

#### *e. Teacher Competency*

Competencies required by teachers are divided into four categories: academic competence, personality competence, professional competence, and social competence (Republic of Indonesia Law No. 14 of 2010 concerning Teachers and Lecturers). These four types of competencies serve as the foundation for developing the education system for educational personnel. Professional educators are tasked with the primary duties of educating, teaching, guiding, directing, training, assessing, and evaluating students in early childhood education, formal education, elementary education, secondary education, and upper-level education (Teacher and Lecturer Law, 2010: 2).

In education, a teacher is an educator, guide, trainer, and leader who can create an engaging learning environment, providing a sense of safety, comfort, and conduciveness in the classroom. Their presence among students can thaw the atmosphere of stiffness, rigidity, and the boredom of learning that is perceived as burdensome by students. Such conditions undoubtedly require skills from a teacher. Competent teachers are a determining factor in a quality education process. To become a teacher with teaching competence, they must be able to discover their identity and self-actualize. The low priority given to educational development so far has had adverse effects on the national life and state. Therefore, teachers are expected not only to perform their profession but also to have a calling to carry out their duties by improving the quality of services to students, both intellectually and in other supporting competencies



that will contribute to improvements in the implementation of learning and the ability to achieve good learning achievements. Academic competence is the teacher's ability to manage the learning process from planning, implementation, and evaluation of learning outcomes and the development of students as individuals. Personal competence involves examining the dedication and loyalty of teachers. They must be resilient, mature, wise, firm, be an example for students, and have noble character. Social competence is the teacher's ability to be part of society, communicate and interact effectively with students, other teachers, parents, and the community. Teachers have the ability to socialize, the ability to be agents of change within the community. Professional ability is the teacher's ability to master the learning material; they must have good knowledge of the subjects they teach, comply with professional ethical codes, maintain and develop good learning strategies, and develop their professional abilities. The competency of teachers is a crucial factor in the learning process, as stated by Wijaya and Rusyam (2009): the higher the ability and competence possessed by teachers in conducting the learning process, the higher the learning outcomes/quality achieved by students in the form of academic and non-academic achievements.

#### *f. Learning Strategies*

Strategy, in general, is understood as a broad reference framework for taking actions to achieve desired goals. When related to learning, learning strategy is defined as the general pattern of activities between teachers and students in a learning activity to achieve predetermined objectives (Ngalimun, 2012: 1). A good learning strategy is crucial because it represents the combination of activities, the way of organizing students' learning materials, equipment and materials, and the time used in the learning process to achieve the specified learning objectives (Suparman, 2017: 9).

Learning strategy is a standpoint and a course of action taken in choosing the right learning method through planning, tactics, and exercises (Romiszowski, 2011: 18). Learning strategy is the way with the aim of making the lessons taught by teachers interesting, enjoyable for students, and successful effectively (Flowers, 2012: 15).

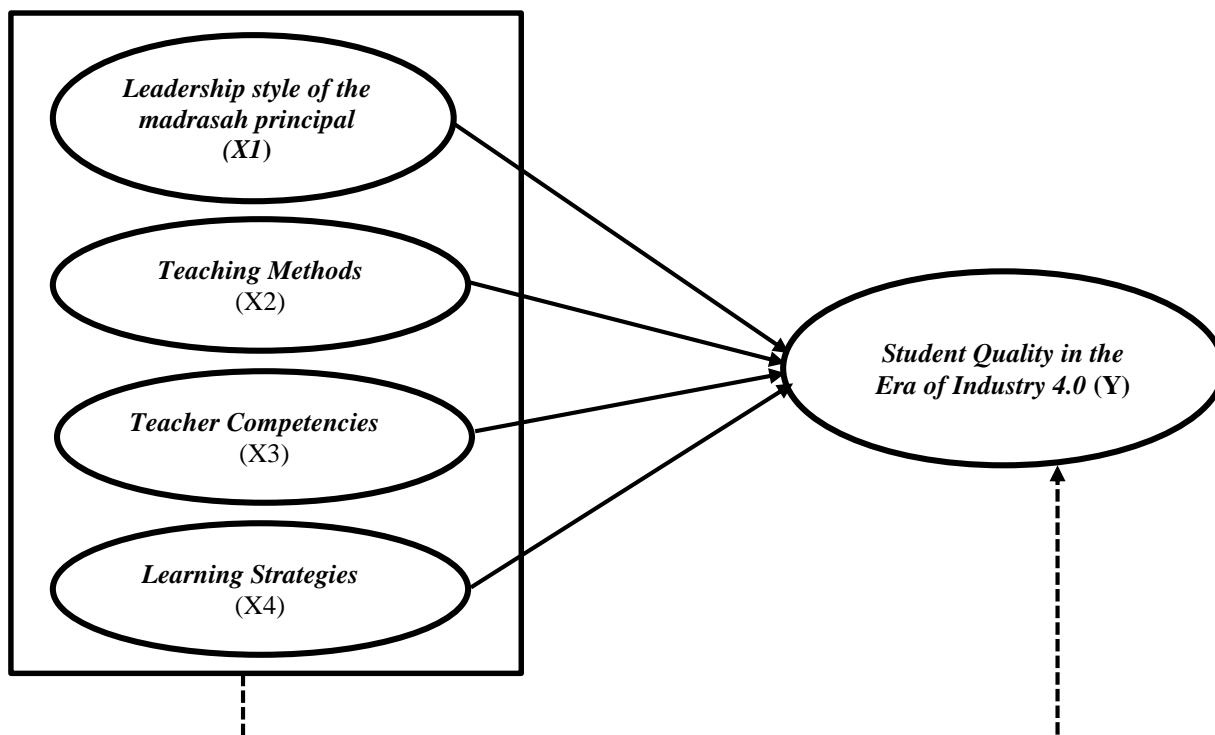
#### *g. Student Quality*

The quality of students can be assessed through both academic and non-academic achievements. Academic achievements are attainable by students in accordance with their interests and talents. Through proper guidance, a student will be able to achieve their achievements effectively. Academic achievement is a phrase consisting of two words: achievement and academic, each with distinct meanings. Achievement, derived from Dutch "prestatie," means the result of an effort. Achievement is an outcome that has been attained, performed, and accomplished by an individual (Baiti, 2010).

Sawiji (2011) divides achievements into two categories: academic achievements and non-academic achievements. According to Bloom, academic achievement is the result of behavioral changes that encompass the cognitive, affective, and psychomotor domains, serving as measures of student success (Sugiyanto, 2013). The cognitive domain represents abilities constantly demanded of students to master because proficiency at this level forms the foundation for acquiring knowledge (Slamento, 2010). Academic achievement is expressed as the knowledge attained or skills developed in specific subjects in the madrasah, usually determined by test scores (Suryabrata, Educational Psychology, 2010). In summary, academic achievement is the extent of a student's mastery of the subject matter, manifested in the form of grades.

To measure students' academic achievement, testing or observation methods are employed. A test is a method of assessment in the form of a task or series of tasks that students must complete to gauge their proficiency (Santrock, 2009). Academic abilities include language proficiency, mathematical skills, and science/technology proficiency (Crow, 2010). Achievement tests aim to determine the extent of a student's ability to master the material that forms the basis of the curriculum (Geiser and Studley, 2011).

**h. Conceptual Framework**



**Figure 1.** Conceptual Framework

**i. Hypothesis**

The hypothesis proposed in this research is:

- H1: The leadership style of the madrasah principal, teaching methods, teacher competencies, and learning strategies have a significant simultaneous effect on student quality in the era of Industry 4.0 at Madrasah Aliyah (MA) in Tapin Regency.
- H2: The leadership style of the madrasah principal, teaching methods, teacher competencies, and learning strategies have a significant partial effect on student quality in the era of Industry 4.0 at Madrasah Aliyah (MA) in Tapin Regency.
- H3: Teaching methods have a significantly dominant effect on student quality in the era of Industry 4.0 at Madrasah Aliyah (MA) in Tapin Regency.

**RESEARCH METHOD**

In this research, data collection was conducted by gathering questionnaires, and then data analysis was performed quantitatively. This type of research is ex post facto research, which aims to investigate events that have occurred and then trace backward to determine the factors that caused the events. In this study, data collection and analysis were conducted to reveal past events. The method used in this research is descriptive associative, which is research to determine the influence or relationship between two or more variables by measuring coefficients or significance with statistics. In this study, the obtained data is described and then tested statistically to draw conclusions. The population in this research was 47 people consisting of 3 heads of Madrasah Aliyah in Tapin Regency, 44 civil servant teachers who had been certified, consisting of 22 teachers of Madrasah Aliyah Negeri 1 Tapin, 14 teachers of Madrasah Aliyah Negeri 2 Tapin and 8 Madrasah Aliyah Assunniyyah teachers. Since the population is less than 100, the entire population is used as the research sample. The sample taken for this study is 47 people. The data analysis in this research utilized multiple linear regression with statistical tools facilitated by the IBM SPSS V.21 program.



**RESULT**

**Validity Test**

**Table 1.** The Result of Validity Test

Variable		Leadership style of the Madrasah Principal	Teaching Methods	Teacher Competencies	Learning Strategies	Student Quality
Leadership style of the Madrasah Principal	Person Correlation	1	.053	.712**	.712**	.861**
	Sig (2 tailed)		.725	.000	.000	.000
	N	47	47	47	47	47
Teaching Methods	Person Correlation	.053	1	.898**	.715**	.962**
	Sig (2 tailed)	.725		.000	.000	.000
	N	47	47	47	47	47
Teacher Competencies	Person Correlation	.044	.156	1	1	.876**
	Sig (2 tailed)	.769	.295			.000
	N	47	47	47	47	47
Learning Strategies	Person Correlation	.024	.055	.877**	.876**	.938***
	Sig (2 tailed)	.870	.715	.000	.000	.000
	N	47	47	47	47	47
Student Quality	Person Correlation	.080	.055	.877**	.1	.938***
	Sig (2 tailed)	.594	.000	.000	.000	
	N	47	47	47	47	47

Source: Primary data processed

Based on the validity test in Table 1 above, in the validity test, all questionnaire items are declared valid because all questionnaire items have correlation values greater than the required r value of 0.3.

**Reliability Test**

**Table 2.** The Result of Reliability Test

No	Variable	Cronbach's alpha	Description
1	Leadership style of the Madrasah Principal (X1)	0,895	Reliable
2	Teaching Methods (X2)	0,682	Reliable
3	Teacher Competencies (X3)	0,859	Reliable
4	Learning Strategies (X4)	0,828	Reliable
5	Student Quality (Y)	0,846	Reliable

Source: Primary data processed.

Based on the results of the reliability test in this study, the reliability value of all instruments is accepted or reliable because it has a minimum Cronbach's Alpha and Cronbach's Alpha If Item Deleted values greater than the reliability standard, which is 0.6.

**Multiple Linear Regression**

The testing was conducted with a confidence level of 95% or a significance level of 0.05 ( $\alpha = 0.05$ ). To examine the validity of these hypotheses, multiple linear regression analysis was employed. In this regression analysis, both simultaneous or F-test and partial or t-test will be conducted.



Table 3. Multiple Linear Regression Test

Variable	B	T Value	Significant
1 (constant)	9,792	423	0,674
Leadership style of the Madrasah Principal (X1)	0,009	0,024	0,981
Teaching Methods (X2)	0,349	2,442	0,019
Teacher Competencies (X3)	0,417	1,853	0,071
Learning Strategies (X4)	-0,359	-1513	0,138

Source: Primary data processed.

The equation derived from the above data table is as follows:

$$Y = 9,792 + 0,009X1 + 0,349X2 + 0,417X3 - 0,359X4 + e$$

Based on the results of the equation above, it can be interpreted as follows:

1. This signifies that if the Constant has a positive value of 9.792, it indicates that when all independent variables are equal to 0, the student quality in the 4.0 era at MA in MAN Kabupaten Tapin, South Kalimantan, is 9.792 percent. The positive sign implies a positive relationship between the independent and dependent variables. This indicates that if all independent variables, including Leadership Style of the School Head (X1), Teaching Method (X2), Teacher Competence (X3), and Learning Strategy (X4), increase, then the Student Quality in the 4.0 era at Madrasah Aliyah Tapin Regency, South Kalimantan will be 9,792 percent.
2. The positive value of b1 indicates a positive relationship between the school head's leadership style and student quality. If the leadership style of the school head is improved, assuming other variables are constant, student quality will also increase. Therefore, a well-implemented and high-quality leadership style of the school head corresponds to good and high-quality student outcomes.
3. The positive value of b2 signifies a positive relationship between teaching methods and student quality. If teaching methods are enhanced, assuming other variables are constant, student quality will increase. Thus, effective and high-quality teaching methods lead to good and high-quality student outcomes.
4. The positive value of b3 indicates a positive relationship between teacher competence and student quality. If teacher competence is improved, student quality will increase.
5. The negative value of β4 implies a negative relationship between learning strategies and student quality. If learning strategies are improved, assuming other variables are constant, student quality will decrease. Therefore, well-implemented and high-quality learning strategies lead to good and high-quality student outcomes, and vice versa.

**Hypothesis Testing**

Decision-making or hypothesis testing in this research involves using the t-test (partial) and the F-test (simultaneous). The results of the partial t-test and the simultaneous F-test in this study can be seen as follows:

**1. t-Test**

The hypothesis can be tested by comparing the calculated t-value with the critical t-value at a 95% confidence level with a significance level (α) of 5% and degrees of freedom (df) equal to 12. If the calculated t-value is greater than the tabulated t-value, it can be concluded that the independent variable significantly influences the dependent variable. In this research, the t-test is also conducted based on probability; if the probability is less than 0.05, the hypothesis proposed in this study is accepted. Conversely, if the probability is greater than 0.05, the hypothesis presented in this research is rejected. Here is the comparison between the tabulated t-value and the calculated t-value.



**Table 4.** Comparison of Tabulated t-value and the Calculated t-value

Variable	Regression Coefficient	t-value	Significance
Leadership style of the Madrasah Principal (X1)	0,009	0,024	0,981
Teaching Methods (X2)	0,349	2,442	0,019
Teacher Competencies (X3)	0,417	1,853	0,071
Learning Strategies (X4)	-0,359	-1513	0,138

Source: Primary data processed.

a. Leadership of the Head of the Madrasah (X1)

The regression result between variable X1 and Y yielded a t-value of 0.024, which is > the t-table value of 3.258. However, based on the probability ( $0.001 < 0.05$ ), the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_1$ ) is accepted. This means that the X1 variable, individually, does not have a significant impact on the Y variable.

b. Teaching Method (X2)

The regression result between variable X2 and Y produced a t-value (2.442) > the t-table value (3.258). Additionally, the probability is  $0.000 < 0.05$ . Consequently, the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_1$ ) is accepted, signifying that the X2 variable significantly influences the Y variable individually.

c. Teacher Competence (X3)

The regression result between variable X3 and Y yielded a t-value of 1.853, which is < the t-table value of 3.258. The probability is  $0.002 < 0.05$ . Thus, the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_1$ ) is accepted, indicating that the X3 variable does not significantly affect the Y variable individually.

d. Learning Strategy (X4)

The regression result between variable X4 and Y obtained a t-value of 1.513, which is < the t-table value of 3.258. The probability is  $0.003 < 0.05$ . Consequently, the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_1$ ) is accepted, suggesting that the X4 variable does not have a significant individual impact on the Y variable.

**2. F-Test**

This test is used with the aim of proving whether the independent variables collectively influence the dependent variable. In addressing the hypotheses proposed at the beginning of the study, the analysis tool utilized is the SPSS software version 21.00.

**Table 5.** The Result of F Test ANOVA<sup>a</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	39.550	3	9.887	3.069	,026 <sup>b</sup>
	Residual	135.301	42	3.221		
	Total	174,851	46			

Source: Primary data processed.

Based on the test results, it can be determined that the calculated F value for the independent variables is 3.069, which is greater than the F-table value of 2.96. Additionally, the significance value is  $0.00 < 0.05$ . Therefore, the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_1$ ) is accepted. This implies that there is no significant influence from the Leadership of the Head of the Madrasah, Teacher Competence, and Learning Strategy on the dependent variable, Student Quality. Thus, Hypothesis 1, which states that there is a positive and significant relationship between the Teaching Method and Student Quality in the Era of the 4.0 Industrial Revolution at Madrasah Aliyah Tapin District, South Kalimantan, can be substantiated.





## DISCUSSION

*The simultaneous influence of the variables of school principal's leadership style, teaching methods, teacher competence, and learning strategies on student quality in the era of Industry 4.0 in Madrasah Aliyah (MA) in Tapin Regency, South Kalimantan*

regency analysis indicates that respondents provided positive responses to the school principal's leadership, teaching methods, teacher competence, and learning strategies. Questions regarding the school principal's leadership style reveal that the principal provides guidance to both teachers and students, establishes the school's vision and mission, empowers teachers, and evaluates programs. All these aspects were answered with a high level of agreement by the respondents.

Questions about teaching methods show that teachers manage the learning process, exhibit communicative and responsive behavior towards students, actively engage in teaching, implement effective learning outcomes, and evaluate teaching methods. Positive responses were also given by respondents to these aspects. Questions about teacher competence indicate that teachers are capable of instilling good moral values in students, creating lesson plans, executing teaching effectively, guiding all students, assisting students facing difficulties, directing students in learning, enhancing students' abilities, assessing student work effectively, and conducting learning evaluations. Respondents positively responded to all these aspects of teacher competence.

Questions about learning strategies show that teachers design, select, organize, create, implement, evaluate, and report on the outcomes of teaching strategies. Respondents provided positive responses to all these aspects. Based on regression results, the variable of teacher competence (X2) emerges as the most dominant or influential variable on student quality in the Industry 4.0 era in Madrasah Aliyah in Tapin Regency. This result is derived from the analysis of questionnaire items, indicating that teachers are perceived to have good competence in educating students, creating lesson plans, conducting effective teaching, guiding students, directing students in learning, enhancing students' abilities, assessing student work, and evaluating teaching. Overall, this research supports the hypothesis that there is a positive and significant relationship between independent variables (school principal's leadership, teaching methods, teacher competence, and learning strategies) and the dependent variable (student quality) in Madrasah Aliyah Tapin Regency in the era of Industry 4.0.

*Partial Effect of Headmaster's Leadership Style, Teaching Methods, Teacher Competence, and Learning Strategies on Student Quality in the Industry 4.0 Era at Madrasah Aliyah (MA) Tapin Regency, South Kalimantan.*

The frequency analysis results from the questionnaire indicate that the majority of respondents provided positive responses to the headmaster's leadership. The headmaster is considered highly successful in providing guidance to both teachers and students, creating the vision and mission of the madrasah, empowering teachers, and effectively evaluating programs. The supervision program implemented by the headmaster also received high support from the respondents. Regarding teaching methods, positive responses were also found. Teachers are perceived as highly successful in managing learning, being communicative and responsive to students, actively engaging in teaching, and effectively evaluating teaching methods. Feedback and reporting on teaching methods also received strong support from the respondents.

In terms of teacher competence, the results indicate that teachers are considered highly capable of educating students' morals, planning learning activities, executing teaching effectively, guiding all students maximally, and assisting students facing difficulties. The assessment of students' work and the evaluation of teaching by teachers also received positive support. Concerning learning strategies, respondents stated that teachers design, choose, arrange, and implement learning strategies effectively. Evaluation of learning strategies and reporting the results of these strategies also received high support from the respondents. Overall, the analysis results conclude that there is a positive and significant relationship between independent variables, such as the headmaster's leadership, teaching methods, teacher competence, and learning strategies, and the dependent variable, namely student quality at Madrasah Aliyah in Tapin Regency. These findings support the proposed hypothesis, indicating that these factors play a crucial role in enhancing the quality of education in the Industry 4.0 era.

*The Influence of Dominant Variables on Student Quality in the Industry 4.0 Era at Madrasah Aliyah (MA) in Tapin Regency, South Kalimantan.*

In the analysis of teacher competence through questionnaire items, the majority of respondents provided positive responses regarding the quality of teacher competence. This is evident in item 1, where 78.7% of respondents strongly agree and 21.3% agree that teachers are capable of educating students' morals effectively. In item 2, 36.2% of respondents strongly agree, 61.7% agree, and 2.1% are neutral regarding teachers' ability to plan learning activities. Subsequent questions regarding the implementation of



learning activities also received positive responses, with 31.9% of respondents strongly agreeing and 68.1% agreeing. Similarly, in item 4, where 36.2% of respondents strongly agree, 61.7% agree, and 2.1% are neutral regarding teachers' ability to guide all students optimally.

In terms of guiding students experiencing learning difficulties (item 5), 27.7% of respondents strongly agree, while 72.3% agree. Item 6, which relates to teachers' ability to guide students, received responses of strongly agree from 21.3% of respondents and agree from 78.7% of respondents. Item 7, assessing teachers' ability to train students, received responses of strongly agree from 10.6% of respondents and agree from 89.4% of respondents. Furthermore, in item 8, related to assessing student work, 14.9% of respondents strongly agree, and 85.1% agree. Item 9, evaluating the implementation of learning assessments, received responses of strongly agree from 17.0%, agree from 76.6%, and neutral from 6.4% of respondents.

Based on regression results, the teacher competence variable (X3) shows a significant influence on student quality at Madrasah Aliyah (MA) in Tapin Regency. The calculated t-value is  $1.853 < \text{the tabulated t-value of } 3.258$ , with a probability of  $0.002 < 0.05$ . Therefore, the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_1$ ) is accepted. The teacher competence variable (X3) is identified as the most dominant variable influencing student quality in the Industry 4.0 era.

## CONCLUSION

Based on the results of the research and discussion, the following conclusions can be drawn:

1. The analysis of various variables, including the school principal's leadership, teaching methods, teacher competence, and learning strategies, based on the frequency analysis of respondent responses, reveals a consistent trend of positive feedback. The school principal's effective leadership, coupled with proficient teaching methods, competent teachers, and strategic learning approaches, contributes to the positive perception of student quality. The regression analysis underscores that teacher competence (X2) emerges as the most dominant variable influencing student quality in the Industry 4.0 era in Madrasah Aliyah in Tapin Regency. Thus, the research supports the hypothesis that there is a positive and significant relationship between these independent variables and the dependent variable of student quality.
2. Similarly, the analysis of the headmaster's leadership, teaching methods, teacher competence, and learning strategies indicates a prevalent positive response from respondents. Effective leadership, coupled with successful teaching methods, competent teachers, and strategic learning approaches, contributes to a positive perception of student quality. The findings align with the proposed hypothesis, affirming the positive and significant relationship between these variables and student quality in Madrasah Aliyah in Tapin Regency in the Industry 4.0 era.
3. The analysis of teacher competence, specifically through questionnaire items, demonstrates a consistent positive response from respondents. The majority of teachers are perceived to excel in various aspects, such as instilling moral values, planning and executing effective teaching, guiding all students, assisting those facing difficulties, and evaluating student work. The regression analysis identifies teacher competence (X3) as a significantly influential variable on student quality. Thus, the research concludes that teacher competence plays a crucial role in determining student quality at Madrasah Aliyah in Tapin Regency in the Industry 4.0 era.

## RECOMMENDATION

Based on the results of the discussion and conclusions, the recommendations from the results of this research are:

1. The leadership of the school principal needs to be strengthened through training and skills development, especially in providing guidance, formulating the school's vision and mission, empowering teachers, and effectively evaluating programs. In this regard, the involvement of the school principal with teachers and students needs to be continuously enhanced to achieve the goal of improving the quality of education.
2. Optimization of teaching methods can be achieved by providing support and resources to teachers to implement responsive, active, and effective teaching methods. Collaboration among teachers also needs to be increased, where sharing best practices in managing learning and evaluating teaching methods can be a means to enhance teaching quality.
3. Improvement of teacher competence can be realized through regular training focusing on aspects of instilling good moral values in students, lesson planning, and effective teaching implementation. Meanwhile, the formation of a learning community among teachers can serve as a platform for mutual support and ongoing competence enhancement.



4. In the context of learning strategies, teachers should be encouraged to continuously design and implement innovative teaching strategies according to students' needs. Providing incentives or rewards to teachers who successfully apply effective teaching strategies can serve as additional motivation.
5. Empowerment and support for students facing learning difficulties need to be strengthened through the enhancement of guidance and counseling programs. Additionally, skills development programs for students will support them in facing challenges in the Industry 4.0 era.
6. Further research is needed to gain a deeper understanding of the factors influencing the quality of education in the Industry 4.0 era. Periodic evaluations of the implementation of recommendations need to be conducted to ensure their effectiveness and adjustments should be made if necessary. Thus, these steps are expected to enhance the quality of education at Madrasah Aliyah in Tapin Regency in line with the demands of the Industry 4.0 era.

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