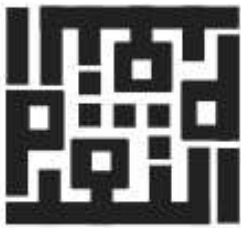# Factors Influencing Student Learning Outcomes: Teacher Competence, Learning Environment, and Learning Stress

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**A B S T R A C T**

The level of progress of a nation significantly depends on the quality of education, which is reflected in the success of the learning process. Teachers, the learning environment, and students' internal conditions are among the primary factors contributing to the success of the learning process. This study aims to determine the significant influence of teacher competence, the learning environment, and academic stress on the learning outcomes of students at MTs Bi'rul Ulum, Gemurung, Gedangan, Sidoarjo. The research employed a quantitative survey method with a population of 115 students, all of whom were included as samples using a total sampling technique. The data were analyzed using multiple regression analysis. The findings of this study revealed that teacher competence has a significant positive effect on students' learning outcomes, the learning environment was found to have an insignificant effect, while academic stress showed a significant influence on students' learning outcomes at MTs Bi'rul Ulum, Gemurung, Sidoarjo. The contribution of this research enriches the discourse on education by examining the impact of teacher competence, learning environment, and academic stress on student learning outcomes in the context of an Islamic junior high school setting, which has not been extensively discussed in the previous literature.

## Introduction

Human life is highly dependent on education because education is a strategic means to improve the quality of human resources. In addition, the level of progress of a country depends on the quality of its education (Sulisworo, 2016). The purpose of education is to create superior, competitive, and faithful human beings who are reflected in learning outcomes through the learning process at home, school, and society (Ima et al., 2023). Peace and prosperity can be achieved by the nation through education. Education can create mentally and physically strong humans. Conversely, the country will be underdeveloped in all respects if the education system is stagnant. Therefore, efforts to improve the quality of education must continue to be pursued.

Efforts to improve the quality of education are inseparable from the success of the learning process which, if carried out properly, will produce maximum learning outcomes (Lumbantoroun & Anggresta, 2023). Learning outcomes are a problem that is very often studied in many countries besides Indonesia such as China and Germany (Lu et al., 2014; Fauth et al., 2019). This is because learning outcomes are the main indicator in assessing the effectiveness of the education system and policies applied to the learning process (Rao et al., 2020). As happened in China, the emphasis on strict education and high discipline has produced students with high academic results, but led to the emergence of academic stress problems followed by a decrease in learning outcomes in students (Liu et al., 2018). In Germany, a more flexible and inclusive education system seeks to create a balance between academic quality and student well-being (Glaesser & Cooper, 2011). Therefore, learning outcomes are still an interesting topic and need to be studied related to various issues to date in various countries, especially for educational institutions in Indonesia in organising the learning process.

Madrasah Tsanawiyah Bi'rul Ulum Gemurung Gedangan Sidoarjo is a madrasah that is undergoing a development process in terms of quality and quantity (Hariadi & Sodig, 2022). As a madrasah that was established in 1963, this madrasah is quite historic. However, the age of its establishment does not guarantee that the madrasah continues to experience significant improvements in quality and quantity. Significant improvements began to be recognised and stated by Hariadi and Sodig (2022) who stated the improvement in the quality of education that was being experienced and began to be continuously pursued by MTs Bi'rul Ulum. The improvement of MTs Bi'rul Ulum including academic and non-academic fields is a proof of commitment to continuously strive to improve the quality of education which includes curriculum improvement, teacher training, and adequate supporting facilities (Creemers & Kyriakides, 2010). Through careful attention to students' individual needs and the application of innovative, developmentally orientated learning methods, the school has endeavoured to create a learning environment that motivates students to develop academically, socially and spiritually (Hariadi & Sodig, 2022). However, these efforts have not been successful in supporting students' learning outcomes, which is an indicator of the success of the learning process to improve the quality of education.

The quality of education in a school or educational institution can be seen from the learning outcomes of its students, which if good, then the quality of education in the school is good (Syaidah et al., 2018; Schoepp, 2019). As the end result of the learning process, learning outcomes will be reflected in changes and developments in students based on what has been learned, as well as a benchmark that reflects the extent of the achievement of learning in achieving educational goals (Knaack, 2015; Kpolovie et al., 2014; Owan et al., 2022). According to Slameto (2010), the factors that influence a person's success in learning are divided into two, namely internal factors such as interest, motivation and stress, and external factors such as facilities, environment and teaching quality. There are at least several aspects involved

in the learning process to produce satisfactory learning outcomes, namely teachers, learning environments, and facilities that can support learning (Titu et al., 2023). In this case, educators who are truly professional and competent are needed.

Teacher competence is one of the factors determining the success of a learning process and has been shown to affect the acquisition of student learning outcomes (Firda & Khairat, 2023; Soro et al., 2024). As educators, teachers have an important role during the learning process, as well as external factors that contribute importantly to the achievement of student learning outcomes (Heyneman & Loxley, 1983). The competence and teaching quality of a teacher in interacting with students will have an impact on the acquisition of student learning outcomes (Soro et al., 2024). A teacher's knowledge and beliefs as part of teacher competence not only concern the content of the knowledge itself, but also how the knowledge is delivered and taught in the classroom (Hill et al., 2005; Fauth et al., 2019). Therefore, competent teachers are an absolute necessity for schools because teachers as educators are the second person for students whose position is irreplaceable by existing tools or technology (Uerz et al., 2018). Likewise, at MTs Bi'rul Ulum Gemurung, based on the findings of Hariadi and Sodig's study (2022), efforts related to improving the quality of teacher competence have been made through certification and the acquisition of professional degrees in order to improve the quality of learning carried out.

In addition to teacher competence, the student learning environment also plays an important role in achieving learning outcomes. The situation that exists when students play, hang out and interact with people around them, will be able to influence the learning process and the acquisition of student learning outcomes (Pratama & Ghofur, 2021; Pande & Cicilia, 2023). The school environment including facilities and infrastructure is very influential on learning. Inadequate facilities can hinder the learning process, while a conducive and cheerful classroom atmosphere can increase students' focus and interest in learning to obtain maximum learning outcomes (Bonem et al., 2020). A good environment will have a positive impact while a poor environment will have a negative impact (Sardiman, 2011). Based on Hariadi and Sodig (2022), MTs Bi'rul ulum has also made efforts to improve supporting facilities, as well as the student learning environment aimed at improving the quality of education. However, until now, no reports have been found regarding whether the learning environment has an effect on the learning outcomes of students in this school. Considering that learning outcomes are very important in efforts to improve the quality of education in an educational institution.

Academic stress is also a factor that can affect the acquisition of learning outcomes of a student. This is because the condition of students who experience academic stress certainly has an impact on the student's learning outcomes (Barseli et al., 2018; Morazes, 2016). High levels of academic stress can interfere with students' concentration and focus, and reduce their motivation to learn (Pascoe et al., 2020). In the long run, excessive academic stress can have a negative impact on students'

academic achievement (Singh et al., 2024). Symptoms of academic stress are certainly caused by several factors. Lin and Chen (2009) mentioned that academic stress comes from several factors, namely: Teachers, learning outcomes, exams, group study, peers, time management, and individual actions (Al Sultan et al., 2023). Good stress control is an effort to improve the acquisition of learning outcomes, while high academic stress has the potential to cause low academic success and even drop out of school (Freire et al., 2016). Therefore, it is important to understand the effect of academic stress in an effort to improve student learning outcomes in order to improve the quality of education at MTs Bi'rul Ulum.

MTs Bi'rul Ulum, which was founded in 1963, has a long history. However, its quality and quantity only showed a significant improvement in Hariadi and Sodiq's (2022) research, which noted an increase in the quality of education in this madrasah, which was pursued through curriculum development, teacher training, and improving facilities according to student needs. The various efforts that have been made by MTs Bi'rul Ulum are a form of commitment from the school to provide higher quality education that can compete and be relevant for the present and a better future for future generations. This study aims to contribute to understanding the factors that influence student learning outcomes at MTs Bi'rul Ulum which is trying to improve the quality of education in order to remain competitive with surrounding educational institutions. Most existing studies tend to investigate either the influence of teacher competence or learning environment separately. Moreover, studies that integrate

academic stress particularly in the context of Islamic junior high schools (madrasah) remain limited. Therefore, this study offers a new contribution by examining how these three key factors individually affect student learning outcomes at MTs Bi'rul Ulum Gemurung, a traditional Islamic school that is undergoing educational transformation. By understanding more about the influence of teacher competence, learning environment, and academic stress, it is hoped that effective intervention strategies can be identified to improve the quality of education and can provide a strong foundation for the development of education policies that are more results-oriented.

## Literature Review

The dependent variable studied in the research was learning outcomes. Learning outcomes were explained as the achievement of a learning and teaching interaction process that included students' affective, cognitive, and psychomotor skills (Kpolovie et al., 2014; Hamdan & Khader, 2014; Knaack, 2015; Owan et al., 2022; Titu et al., 2023). Bloom et al. (1964) classified learning outcomes in three domains, namely the cognitive, affective, and psychomotor domains, which were used as indicators for measuring learning outcome variables (Moore, 2014).

Furthermore, the first independent variable of the study was teacher competence, which was the ability to transfer knowledge and skills and apply the values of knowledge, life experience, expertise, and personality that included individual, collective, organizational, and professionalism aspects (Hill et al., 2005; Mardapi & Herawan, 2018; Fauth et al., 2019; Ihsani, 2019; Podkhodova et al.,

2020; Lumbantoruan & Anggresta, 2023; Moreira et al., 2023). According to Kim and Kim (2016), teacher competence was measured through seven indicators, namely: 1) Understanding of the subject; 2) Learning methods; 3) Encouragement for students to participate; 4) Understanding of learning; 5) Teaching environment and conditions; 6) Evaluation of learning; 7) Individual qualifications.

The learning environment, as the second independent variable, was a condition or situation that existed around students (Dewey, 1923; Moos & Trickett, 1987; Winkel, 1989; Pratama & Ghofur, 2021; Pande & Cicilia, 2023). There were nine indicators for measuring learning environment variables, including: 1) Student closeness to the teacher; 2) Relationships with fellow students; 3) Learning methods and learning tools; 4) Parental education; 5) Family circumstances; 6) Parental attention; 7) Children's activities carried out in the community; 8) Friends hanging out in the home and community; 9) The existing lifestyle of society and mass media or social media (Slameto, 2010).

The third independent variable was academic stress. Academic stress was essentially a psychological symptom in a person when they felt unbalanced between demands and abilities (Barseli et al., 2018). Academic demands, such as the perception of the amount of material to be learned and the lack of time to develop it, created psychological pressure, which was referred to as academic stress (Fisher, 1994; Misra & Castillo, 2004; Govaerts & Grégoire, 2004; Barseli et al., 2018; Hakim et al., 2022). According to Sun et al. (2013), there were five indicators used in measuring the

academic stress scale, namely: 1) Pressure from study (pressure in facing tasks); 2) Workload (the extent to which students were burdened with academic tasks and responsibilities); 3) Worry about grades (worry about grades and academic failure); 4) Self-expectation (academic expectations or targets, as well as the pressure that arose from not achieving them); 5) Study despondency (the level of despair when experiencing academic difficulties).

## Research Method

This research was a quantitative survey type. Numbers in the form of numerical data were used in quantitative research to explain a phenomenon or empirical experience, which was then analyzed with statistical-based methods (Yilmaz, 2013). In this survey study, data collected were in the form of test scores or other measurements to test hypotheses in research, explain, and predict relationships or influences between variables, and build generalizations about the phenomena studied (Fraenkel et al., 1993; Barth & Blasius, 2021).

The object of the research was MTs Bi'rul Ulum Gemurung, Gedangan, Sidoarjo, in which all 115 students in the 2024/2025 school year were members of the population. The total number of students was taken as a sample using the total sampling technique, which was a technique used when the researcher was able to take all the population as a sample (Babbie, 2020). The hypothesis set by the research was that teacher competence, learning environment, and academic stress had a significant effect on the learning outcomes of MTs Bi'rul Ulum students partially.

The data collection was carried out through

observation of the research object, as well as instruments in the form of closed questionnaires using a Likert scale of one to eight, which were distributed simultaneously to respondents, namely MTs Bi'rul Ulum Gemurung students.

The research was conducted for approximately two months, from October to November, including the processes of observation, preparation, instrument validation, and data collection on 9 October 2024 at MTs Bi'rul Ulum Gemurung. Questionnaires containing instruments from each variable became a means of data collection. Furthermore, data quality testing in the form of validity, reliability, and classical assumption testing was carried out to measure the level of data feasibility for multiple regression using the SPSS 26 statistical program.

**Result and Discussion**

The data used were in accordance with the provisions, one of which was determined using a questionnaire. All students of MTs Bi'rul Ulum were taken as a sample, resulting in a total of 115 students as respondents. In addition to data from questionnaires based on indicators of each variable, descriptions of each variable teacher competence, learning environment, academic stress, and learning outcomes were also collected using multiple-choice closed statements and questions.

The respondents consisted of six classes, namely VII A with 19 students, VII B with 17 students, VIII A with 15 students, VIII B with 17 students, IX A with 23 students, and IX B with 24 students. Answers to the questionnaire and variable descriptions were obtained from these respondents.

**Table 1** Description of Teacher Competence

| Answer Description | Total | Percentage |
|---|---|---|
| Personality Competence | 44 | 38,3% |
| Pedagogic Competence | 3 | 2,6% |
| Professional Competence | 23 | 20% |
| Social Competence | 45 | 39,1% |

Source: Results of SPSS 26

Table 1 is the result of the distribution of MTs Bi'rul Ulum students' answers to closed-ended statements highlighting the main things to be considered from teacher competence, and in the form of multiple choices. The results show that social competence is the main concern with a percentage of 39.1%, followed by personality competence which reached 38.3%. These percentages show that the aspects of teachers' ability to interact and a strong personality are considered very important. Professional competence gained a percentage of 20%, indicating that teachers' mastery of materials and skills are also of considerable concern. Finally, pedagogic competence was at the lowest position with 2.6%, indicating that this competence is less prioritised by respondents in their perception of teacher competence.

Based on the answers of MTs Bi'rul Ulum student respondents, it is known that what students pay most attention to from a teacher is the social competence and personality competence of a teacher. The data shows that the teacher's ability to interact in establishing good and harmonious communication with students, especially during the learning process and delivering material to the teacher's ability to create a comfortable learning atmosphere during learning activities is an aspect that is highly considered by students.

Table 2 Description of Learning Environment Variables

| Answer Description | Total | Percentage |
|---|---|---|
| Family Environment | 11 | 9,6% |
| Community or Friendship Environment | 32 | 27,8% |
| School Environment | 72 | 62,6% |

Source: Results of SPSS 26

Based on table 2, the distribution of answers from students to the question 'Which environment can make you learn the most?', the majority of students, namely 72 students (62.6%) chose the school environment as the main source that provides many lessons. A total of 32 students (27.8%) chose the community or friendship environment, and 11 students (9.6%) chose the family environment. The results show that the school environment is the dominant factor in supporting students' learning process, followed by the influence of the community or friendship environment, while the family environment plays a minor role in this analysis.

The distribution of students' answers shows that school is the dominant place in supporting the development of students' knowledge and skills. Furthermore, many students also mentioned the community or friendship environment as a place that has a significant influence on the learning process. This environment is considered capable of complementing formal learning at school, especially in terms of experience and social skills. Meanwhile, the family environment received the least attention as a place to learn. Although the family plays an important role in character and values formation, it seems that students feel that its contribution to academic learning is not as great as that of the school or community.

Table 3 Description of Academic Stress Variables

| Answer Description | Total | Percentage |
|---|---|---|
| Reality related to education that does not match expectations | 40 | 34,8% |
| Difficult School Assignments | 51 | 44,3% |
| Parental Demands related to Grade Targets | 24 | 20,9% |

Source: Results of SPSS 26

The description of the academic stress variable was taken with a closed-ended question that asked about what factors were most stressful in the learning process. The distribution of students' answers about the academic stress variable in table 3 shows that the majority of students feel stressed or depressed due to difficult

school assignments, with 51 students (44.3%) choosing it as the main factor. The second factor considered to trigger stress is the reality related to education that does not match expectations, chosen by 40 students (34.8%). Finally, parental demands related to grade targets were a cause of stress for 24 students (20.9%). This distribution shows that academic load and high expectations, both from the education system and from parents, are significant factors in increasing students' stress levels in the learning process.

Based on students' responses to the question regarding the most stressful factor in the learning process, most students revealed that difficult school assignments were the main cause of the pressure they felt. Academic demands, namely tasks that they find difficult along with the time period given at school, show the existence of pressure on MTs Bi'rul Ulum students. School assignments are often an important part of the learning system. However, when these tasks are perceived as too much, too difficult, and too far from students' abilities, this can actually be a source of pressure. Meanwhile, the feeling of pressure on students that is not excessive in nature will actually be able to encourage students to be able to overcome it.

Table 4 Description of Learning Outcome Variables

| Answer Description | Total | Percentage |
|---|---|---|
| Teacher or Instructor | 60 | 52,2% |
| Family | 26 | 22,6% |
| Friendship Environment | 29 | 25,2% |

Source: Results of SPSS 26

The distribution of students' answers in Table 4 about the most influential factors in obtaining good learning outcomes, shows that most students consider teachers or instructors as the main factor, with 60 students (52.2%) choosing it. The friendship environment is the second factor considered influential, with 29 students (25.2%) choosing it, while family occupies the third position, chosen by 26 students (22.6%). This distribution shows that the role of teachers is very important to most students in supporting their learning process. It also highlights the influence of the social environment, both from peers and family, for better learning outcomes.

Based on the distribution of answers from MTs Bi'rul Ulum students, the majority of whom consider that teachers or instructors are the most influential factor in supporting good learning outcomes, the quality of teaching in terms of material delivery, the ability to guide, and the interaction between teachers and students, means a lot to students in their learning process to be able to obtain good learning outcomes. This shows how important the role of the teacher is in the learning process. Teachers are not only tasked with delivering subject matter, but also guiding students to better understand what they are learning. Teachers also act as motivators who encourage students to achieve their best potential. Therefore, the quality of teaching and good relationships between students and teachers are important in creating maximum learning outcomes.

Friendship and family environment factors are also considered as factors that are quite influential for students to obtain good learning outcomes after teaching factors

based on the answers of MT's Bi'rul Ulum students. Peers are often a place to share information, discuss, learn together, which makes the learning process feel more enjoyable. A positive friendship environment motivates students to support each other in achieving learning goals. Meanwhile, the family environment can provide encouragement, create a learning atmosphere, and fulfil students' needs. However, as students spend most of their time in the school area or with friends, the role of family is less visible in directly supporting learning outcomes when compared to the teaching and peer environment factors.

After describing each variable, the questionnaire data was analysed. The first test carried out to be able to do multiple regression analysis is the data quality test, namely validity and reliability, as well as classical assumptions.

Table 5 Validity Results

| Item | CITC | Criteria |
| --- | --- | --- |
| X1.1 | 0.471 | Valid |
| X1.2 | 0.617 | Valid |
| X1.3 | 0.665 | Valid |
| X1.4 | 0.630 | Valid |
| X1.5 | 0.565 | Valid |
| X1.6 | 0.606 | Valid |
| X1.7 | 0.594 | Valid |
| X1.8 | 0.675 | Valid |
| X1.9 | 0.555 | Valid |
| X1.10 | 0.601 | Valid |
| X1.11 | 0.632 | Valid |
| X1.12 | 0.556 | Valid |
| X1.13 | 0.592 | Valid |
| X1.13 | 0.537 | Valid |
| X1.14 | 0.471 | Valid |
| X2.1 | 0.463 | Valid |
| X2.2 | 0.596 | Valid |

| Item | CITC | Criteria |
| --- | --- | --- |
| X2.3 | 0.636 | Valid |
| X2.4 | 0.586 | Valid |
| X2.5 | 0.421 | Valid |
| X2.6 | 0.644 | Valid |
| X2.7 | 0.615 | Valid |
| X2.8 | 0.709 | Valid |
| X2.9 | 0.601 | Valid |
| X2.10 | 0.497 | Valid |
| X2.11 | 0.645 | Valid |
| X2.12 | 0.717 | Valid |
| X2.13 | 0.637 | Valid |
| X2.14 | 0.556 | Valid |
| X2.15 | 0.692 | Valid |
| X2.16 | 0.599 | Valid |
| X2.17 | 0.611 | Valid |
| X2.18 | 0.712 | Valid |
| X3.1 | 0.329 | Valid |
| X3.2 | 0.627 | Valid |
| X3.3 | 0.511 | Valid |
| X3.4 | 0.498 | Valid |
| X3.5 | 0.427 | Valid |
| X3.6 | 0.555 | Valid |
| X3.7 | 0.488 | Valid |
| X3.8 | 0.377 | Valid |
| X3.9 | 0.467 | Valid |
| X3.10 | 0.527 | Valid |
| Y.1 | 0.688 | Valid |
| Y.2 | 0.639 | Valid |
| Y.3 | 0.690 | Valid |
| Y.4 | 0.704 | Valid |
| Y.5 | 0.673 | Valid |
| Y.6 | 0.615 | Valid |

Source: Results of SPSS 26

Based on table 5, all 48 statement items obtained the results of the CITC or corrected item value> 0.3 (Field, 2018). Based on the validity test results obtained, all statement items are declared valid.

Table 6 Reliability Results

| Variable | Cronbach's Alpha | N of Items | Explanation |
|---|---|---|---|
| Teacher Competence (X1) | 0,900 | 14 | Reliable |
| Learning Environment (X2) | 0,923 | 18 | Reliable |
| Academic Stress (X3) | 0,793 | 10 | Reliable |
| Learning Outcomes (Y) | 0,868 | 6 | Reliable |

Source: Results of SPSS 26

The reliability test results in table 6 show that all research variables, namely teacher competence, learning environment, academic stress, and learning outcomes, obtained a Cronbach's Alpha> 0.6 value (Hair et al., 2014). Based on the results of validity and reliability data quality, all research data are known to meet the criteria and can be continued at the classical assumption test stage.
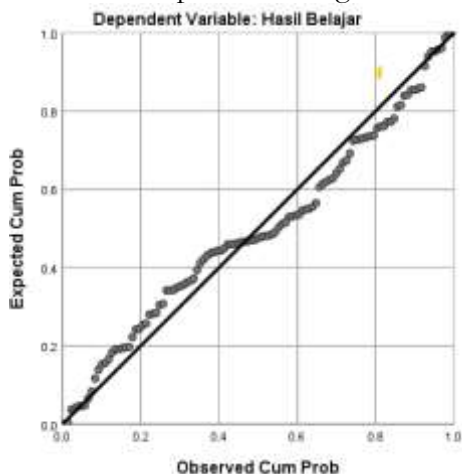


Figure 1 Normality Results
Source: Results of SPSS 26

The test results in Figure 1 show that the points spread around and follow the line. These results are the results of testing the normality of data using the P-P plot graph. Based on these results, the data is declared normally distributed.

Table 7 Multicollinearity Results

| Variable | VIF | Tolerancia | Explanation |
|---|---|---|---|
| Teacher Competence | 2,479 | 0,403 | There is no multicollinearity. |
| Learning Environment | 2,188 | 0,457 | There is no multicollinearity. |
| Academic Stress | 1,847 | 0,541 | There is no multicollinearity. |

Source: Results of SPSS 26

A variable is considered to have no multicollinearity issues if the VIF value is no more than 10 and the tolerance value is at least 0.1. Based on Table 7, there are no signs of multicollinearity in this study.
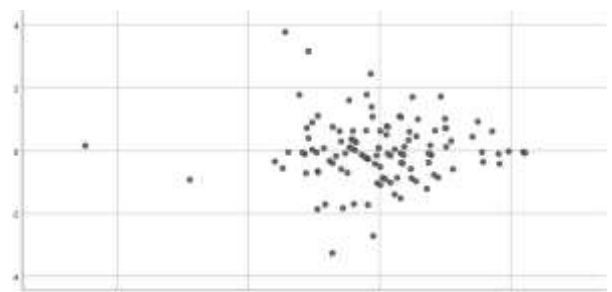


Figure 2 Scatterplot Results
Source: Results of SPSS 26

Data Processing Results Scatterplot testing with a graph is used to meet the heteroscedasticity assumption test. Figure 2 shows that the data distribution is spread out, not forming any clear patterns or

waves. The points are seen scattered above and below the number 0 on the Y-axis, and they do not form a clear pattern or wave. Based on these results, it can be stated that there are no signs of heteroscedasticity.

After meeting the data quality tests and classical assumptions, multiple regression is conducted to determine the level of influence between the independent and dependent variables of the study. The level of influence of the variables of teacher competence, learning environment, and academic stress on learning outcomes can be determined by predicting learning outcomes based on variations in teacher competence, learning environment, and academic stress.

Table 8 t-Test

| Model | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| (Constant) | -2.384 | 2.861 | | -.833 | .406 |
| Teacher Competence | .160 | .044 | .321 | 3.636 | .000 |
| Learning Environment | .059 | .032 | .152 | 1.832 | .070 |
| Academic Stress | .302 | .052 | .439 | 5.771 | .000 |

Source: Results of SPSS 26

Table 8 presents the t-test results. The criteria according to Hair et al. (2016) is significance <0.05. The variables of teacher competence and academic stress found a

significance of 0.000. The results indicate that teacher competence and academic stress have a significant impact on learning outcomes. Meanwhile, the learning environment obtained a significance level of 0.070, which means its influence on learning outcomes is not significant.

The results of the regression equation presented in Table 8 yield the value $Y = -2.384 + 0.160X1 + 0.059X2 + 0.302X3$. The obtained constant of -2.384 indicates that the contribution of the dependent variable in this study is highly needed for the independent variables in the research. The regression equation is interpreted such that if teacher competence (X1), learning environment (X2), and academic stress (X3) are all assumed to be 0, then the learning outcomes are predicted to be -2.384.

The regression coefficient of the teacher competence variable (X1) is 0.160. It can be interpreted that if the value of the teacher competence variable (X1) increases by one unit, it will cause an increase of 0.160 in the value of the learning outcome variable (Y). The regression coefficient for the learning environment (X2) is 0.059, meaning that if the learning environment variable (X2) increases by one unit, it will cause an increase of 0.059. The regression coefficient of the study stress variable (X3) is 0.302, which means that if the value of the study stress variable (X3) increases by one unit, it will cause an increase in learning outcomes by 0.160.

Table 9 F-Test

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| 1 Regression | 2560.640 | 3 | 853.547 | 69.283 | .000 b |
| Residual | 1367.481 | 111 | 12.320 | | |
| Total | 3928.122 | 114 | | | |

Source: Results of SPSS 26

Based on Table 9, the significance value obtained is 0.000. The value is less than 0.05 (Montgomery et al., 2021). The acquisition of that value indicates that all independent variables in this study simultaneously have a positive and significant effect on the dependent variable, which is learning outcomes.

Table 10 Coefficient of Determination

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .807a | .652 | .642 | 3.510 |

Source: Results of SPSS 26

Table 10 presents that the obtained Adjusted R Square value is 0.642. Based on these findings, it can be interpreted that the contribution of the variables of teacher competence, learning environment, and academic stress is 64.2% towards the variable of student learning outcomes. The remaining 35.8% is influenced by variables other than those included in the regression model conducted by the researcher.

**The Influence of Teacher Competence on the Learning Outcomes of Students at MTs Bi'rul Ulum Gemurung**

Based on the regression results, teacher competence has a significant positive effect on learning outcomes. The testing of the first hypothesis that student learning outcomes are positively and significantly influenced by teacher competence at MT's Bi'rul Ulum was accepted. The acceptance of the first hypothesis confirms that the higher the teacher's competence, the higher the students' learning outcomes. The findings of this study are consistent with the research of Syaidah et al. (2018); Prihantoro et al. (2019); Fauth et al. (2019); Titu et al. (2023); Soro et al. (2024), which found that teacher competence has a significant positive effect on student learning outcomes.

According to Romiszowski et al. (1996), learning is not just a process of acquiring knowledge, but an active process of constructing knowledge, while teaching is an effort to support that process, not just delivering it. Furthermore, Donald et al. (2006) also stated that learning is a process that requires student activity in building understanding, which means deriving meaning and lessons from every event and experience, one of which is their interaction with the teacher. Furthermore, Suparno (1997) stated that the role of the teacher is as a facilitator who helps create conditions, interactions, and means so that the process of students building knowledge runs effectively. As educators, teachers play an important role during the learning process, serving as an external factor that significantly contributes to students' learning outcomes (Heyneman & Loxley, 1983; Syaidah et al., 2018). The quality of

teaching includes management, understanding of the material, and interaction between teachers and students as part of teacher competence, which is important for the formation of student learning outcomes (Fauth et al., 2019).

With this, a teacher's competence becomes the main factor in the success of the learning process. In this study, the novelty lies in its application within a madrasah setting, where the role of teacher competence carries unique social and religious dimensions compared to public schools. The research findings that show a significant influence of teacher competence on the learning outcomes of MTs Bi'rul Ulum students reinforce the principle that competent teachers help students achieve better learning outcomes because students are able to build a deeper and more meaningful understanding.

The results indicate that teacher competence needs special attention for MTs Bi'rul Ulum in an effort to improve student learning outcomes. Therefore, in an effort to improve the quality of education at this school, several steps need to be taken, including regularly organizing training and professional development for teachers, conducting comprehensive performance evaluations, and providing incentives and awards for outstanding teachers. In addition, improving learning infrastructure will facilitate better interaction between teachers and students. Collaboration with universities and the establishment of learning communities for teachers are also important. Thus, it is expected to have a positive impact on improving student learning outcomes and the quality of teaching in schools, so that the quality of education at MTs Bi'rul

Ulum can continue to be enhanced.

**The Influence of the Learning Environment on the Learning Outcomes of Students at MTs Bi'rul Ulum Gemurung**

The regression results that have been presented and interpreted show that the influence of the learning environment on the learning outcomes of MTs Bi'rul Ulum students is not significant and relatively low. The testing of the second hypothesis that learning outcomes are positively and significantly influenced by the learning environment was not proven for the students of MTs Bi'rul Ulum Gemurung. The results obtained in this study differ from several previous studies such as Lu et al. (2014); Suminar (2018); Inuen (2020); Pratama and Ghofur (2021); Pande and Cicilia (2023), which state that the learning environment has a significant positive effect on learning outcomes. However, the results of this study are consistent with the research by Mustofa (2021), which found no significant influence of the learning environment on learning outcomes.

According to the constructivist principles by Romiszowski et al. (1996); Newby et al. (2000); Donald et al. (2006), in the learning process, the main emphasis is on the active role of students in constructing knowledge through internal interactions with the material and their own thinking processes, rather than solely on the external environment, ultimately resulting in the creation of new knowledge and skills. This principle aligns with the views of Vygotsky and Cole (1978), who state that active interaction with the environment helps students acquire knowledge and values that change their attitudes, meaning cognitive development is influenced by social

interaction with more competent individuals (teachers or peers), not just by the physical or external environment.

Furthermore, Mutofa's (2021) research states that the insignificant influence of the learning environment on learning outcomes is due to the surrounding environment not supporting students in being diligent in their studies. Students tend to use the environment only as a place to play, so most of their time is wasted and less beneficial for their learning outcomes. Thus, although the learning environment plays a role in providing support, the quality of learning outcomes depends more on how students can understand, process, and interpret the material and experiences in the environment to acquire new knowledge and skills, rather than merely on the influence of their environment.

The results of this study provide several important implications for the school in its efforts to improve the quality of learning. First, although the learning environment has not been proven to be a dominant factor in improving student learning outcomes at MTs Bi'rul Ulum Gemurung, the school still needs to ensure a conducive learning environment. The school management can optimize the learning environment, both at school and at home, by providing more conducive facilities and supporting resources. In addition, supervision from teachers and parents needs to be improved so that students can better utilize their environment for learning. Development programs are also important to help students manage their time well between playing and studying. Second, the school needs to focus on improving the quality of education, such as curriculum development, teacher training,

and the use of teaching methods that can motivate students to make the most of their learning environment. Third, cooperation with parents is very important to create a supportive learning environment at home. Lastly, further research is needed to identify other factors that can improve student learning outcomes, so that more precise and effective strategies can be formulated to enhance the quality of education at MTs Bi'rul Ulum.

## The Influence of Academic Stress on the Learning Outcomes of Students at MTs Bi'rul Ulum Gemurung

The results show that academic stress has a significant positive impact on learning outcomes. The testing of the third hypothesis that the learning outcomes of MTs Bi'rul Ulum students are positively and significantly influenced by academic stress is indeed true. The testing of the third hypothesis proves that learning outcomes improve along with good management of academic stress. The instrument for the academic stress variable in this study was constructed in the form of positive statements.

Therefore, the research results indicate that students who can effectively manage academic stress will achieve higher learning outcomes. On the contrary, if academic stress increases without being managed well, students' learning outcomes tend to decline. These results reinforce the research of Tetteh and Sarpong (2015); Barseli et al. (2018); Hakim et al. (2022); Helmahani and Biromo (2022); Gobena (2024), which obtained similar findings. The regression equation found that academic stress has a greater impact on student learning outcomes compared to

teacher competence and the learning environment at MTs Bi'rul Ulum Gemurung.

These findings indicate that academic stress at certain levels, along with good management, can encourage students to achieve better learning outcomes at MTs Bi'rul Ulum Gemurung. Conditions of academic stress that are not excessive tend to motivate students to be more focused, increase their learning efforts, and strive hard to meet academic demands. Barseli et al. (2018) state that stress is not always negative; rather, low-level academic stress becomes a challenge that motivates students to overcome it. Well-managed academic stress can serve as a positive drive (eustress) for students to achieve their learning targets, unlike excessive stress which can reduce performance (Singh et al., 2024).

Helmahani and Biromo (2022) state that eustress can be a motivation to overcome learning problems so that a student can achieve good learning outcomes. This view is in line with Piaget's (1954) constructivist theory, which emphasizes that optimal cognitive development occurs when individuals are faced with cognitive challenges that encourage them to understand and interpret knowledge. Active learning in problem-solving can strengthen their understanding, which, in the context of optimal academic stress, academic challenges become stimuli for students to process and comprehend the material independently.

Optimal academic stress significantly contributes to the learning outcomes of MTs Bi'rul Ulum Gemurung students, and its impact is greater compared to other factors such as teacher competence and the learning environment. Positioning academic stress not merely as a negative pressure but as a positive driving force (eustress) that proves to be the most dominant factor influencing madrasah students' learning outcomes is one of the distinctive contributions of this study. Based on these findings, the school authorities need to implement stress management strategies that support the creation of positive stress conditions (eustress) in order to improve students' learning outcomes. The steps that can be taken include organizing stress management education programs for students so they can understand and manage academic stress productively. In addition, the teachers at MTs Bi'rul Ulum Gemurung can design challenging yet measurable learning through tasks and evaluations that are proportional to the students' abilities, so that students can experience academic pressure that encourages them to strive hard without feeling excessively burdened. Counseling and guidance at MTs Bi'rul Ulum also need to be maximized to provide psychological support for students and help them cope with and manage academic pressure.

Periodic monitoring of the study load needs to be conducted by the school to ensure that students' academic stress levels remain within a healthy range. If the learning load is deemed excessive, adjustments to the curriculum or study schedule can be made to maintain a balance between academic pressure and the students' mental well-being. With these measures, MTs Bi'rul Ulum is expected to manage student academic stress at an optimal level, enhance learning motivation, and support better academic achievement.

**Conclusion**

Based on the research findings regarding the influence of teacher competence, learning environment, and academic stress on student learning outcomes at MTs Bi'rul Ulum Gemurung, several important conclusions were drawn, including:

1. The competence of teachers had a significantly positive influence on the learning outcomes of students at MTs Bi'rul Ulum Gemurung. The higher the teacher's competence in teaching, the higher the students' learning outcomes. This finding emphasized the importance of developing and improving the quality of teachers in supporting students' academic achievements. MTs Bi'rul Ulum Gemurung was advised to continuously improve teacher competence through training programs, teaching workshops, and professional development initiatives.

2. The influence of the learning environment on the academic performance of students at MTs Bi'rul Ulum Gemurung was found to be insignificant. Although it was not the main determinant of academic success for students at MTs Bi'rul Ulum, efforts to improve the quality of the learning environment remained necessary to create conducive learning conditions. Although the learning environment was not proven to significantly affect the learning outcomes of students at MTs Bi'rul Ulum, efforts to create a positive learning atmosphere remained important. The school could optimize facilities and supporting resources to ensure that students learned in a more comfortable and productive environment, thereby achieving better learning outcomes.

3. Academic stress was proven to significantly affect the learning outcomes of MTs Bi'rul Ulum students, with a greater impact compared to teacher competence and the learning environment. These findings indicated that well-managed stress levels (eustress) encouraged students to be more focused, increased motivation, and facilitated optimal learning outcomes. The implementation of a stress management program was recommended, including coping skills and motivation training. In addition, the school was encouraged to maximize the availability of counseling services by recruiting guidance counselors who were graduates of educational psychology programs. This aimed to identify and control students' stress levels, enabling them to utilize stress as a positive drive to enhance focus and enthusiasm in learning, ultimately improving their learning outcomes.

This study enriches the educational discourse by exploring the influence of teacher competence, learning environment, and academic stress on student performance in an Islamic junior high school setting, which has not been widely discussed in previous literature.

**Recommendation**

Further research was also highly recommended to explore other factors influencing learning outcomes, such as parental support, students' intrinsic motivation, or the use of technology in learning. Such research was expected to provide deeper insights into the factors contributing to students' academic success,

enabling the formulation of more precise and effective strategies to improve the quality of education at MTs Bi'rul Ulum Gemurung.

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