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THE INFLUENCE OF LEARNING CLIMATE AND LEARNING STYLES ON CREATIVITY IN PRIMARY ISLAMIC EDUCATION

Mustofa Tohari [1], Syaiful[2], Moh. Amiril Mukminin[3], Rafat B Dauda[4]
[1] Universitas Bangka Belitung, Indonesia
[2,3]STIT Al-Ibrohimy, Bangkalan, Indonesia; [4]University of Ilorin, Nigeria
e-mail: mustofa-tohari@ubb.ac.id[1], syaifulok02@gmail.com[2],
amrilsafair@gmail.com[3], dauda.rb@unilorin.edu.ng[4]

Abstract
This study aims to analyze the influence of learning climate and learning styles on students' creativity in Islamic Education. Employing a quantitative approach with a correlational design, the research involved 42 respondents selected through purposive sampling. Data were collected using questionnaires to measure learning climate, learning styles, and student creativity, and subsequently analyzed using multiple linear regression. The findings indicate a significant positive influence of both learning climate and learning styles on students' creativity. Specifically, the regression analysis yielded coefficients of 0.240 for learning climate and 0.269 for learning styles, confirming that both variables contribute significantly to the outcome. The Adjusted R Square value of 0.148 reveals that learning climate and learning styles explain 14.8% of the variance in student creativity, while the remaining 85.2% is attributed to other factors outside the scope of this study. These results suggest that optimizing the classroom environment and accommodating diverse learning preferences are essential, though not exclusive, strategies for fostering creativity.
Keywords: *Learning Climate, Learning Styles, Student Creativity*

INTRODUCTION

Creativity is widely recognised as a critical skill in the 21st century, essential for problem-solving and innovation across various domains, including education (Runco, 2014) Within the context of Islamic Education, fostering creativity is particularly important as it enables students to integrate traditional religious knowledge with modern problem-solving approaches. However, the extent to which environmental factors, such as the learning climate, and personal factors, like learning styles, influence creativity in this domain remains underexplored.

Existing research has highlighted the significant role of the learning climate in shaping students creativity. A supportive and engaging learning environment can enhance creative thinking by reducing anxiety and encouraging experimentation (Amabile, 2017; Beghetto & Kaufman, 2007). Similarly, learning styles are known to impact students' ability to approach tasks creatively, as individual differences affect how students process information and generate ideas (Cassidy, 2004; Kolb, 1984). Despite these findings, studies investigating the combined impact of the learning climate and learning styles on creativity in Islamic Education remain scarce.

The gap in the literature lies in the limited exploration of creativity within the specific context of Islamic Education. Most studies focus on general educational settings,

E-mail address: mustofa-tohari@ubb.ac.id, syaifulok02@gmail.com, amrilsafair@gmail.com, dauda.rb@unilorin.edu.ng
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neglecting the unique challenges and opportunities present in religious education (Halstead, 2004; Saada, 2020). Moreover, there is insufficient empirical evidence on how these factors interact to influence creativity in Islamic Education, particularly in Indonesia, where Islamic Education plays a pivotal role in shaping students' moral and intellectual development (Effendi et al., 2020; Muttaqo et al., 2025).

This study addresses these gaps by examining the combined influence of the learning climate and learning styles on creativity in Islamic Education. It contributes novel insights by employing a quantitative approach to identify the extent to which these factors predict creativity, thus providing ractical implications for educators in designing effective learning environments.

METHOD

This study adopts a quantitative approach with a correlational design to examine the effects of learning climate and learning styles on students' creativity in Islamic Education. Correlational design allows the investigation of relationships among variables in a natural setting without manipulating them, enabling researchers to determine the strength and direction of these relationships (Ary et al., 2018; Cohen et al., 2018).

The population for this research consists of students actively participating in Islamic Education courses. A purposive sampling technique was employed to select 64 respondents based on specific inclusion criteria, such as consistent class attendance and active participation in learning activities. Purposive sampling ensures the selection of participants relevant to the research objectives and enhances the accuracy of the findings (Johnson & Christensen, 2020). The sample size meets the minimum threshold for correlational studies, ensuring reliable and generalisable outcomes (Fraenkel et al., 2012; Kothari, 2015)

Data were gathered using three validated and reliable instruments aligned with the study's variables (see table 1)

Table 1 Instruments and Indicators

Variable	Instrument	Indicators	Source
Learning Climate	Learning Climate Questionnaire (LCQ)	- Supportive learning environment - Collaborative atmosphere - Encouragement for creativity	Amabile (1996)
Learning Styles	Learning Styles Questionnaire (LSQ)	- Active/reflective style - Visual/verbal preference - Sequential/global learning approach	Kolb (1984)
Creativity	Creativity in Education Questionnaire (CEQ)	- Idea generation - Problem-solving creativity - Flexibility in thinking	Runco (2014); Beghetto & Kaufman (2007)

Each questionnaire utilised a 5-point Likert scale, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). To ensure the validity and reliability of the instruments, pilot testing was conducted before the main data collection. The instruments' validity and internal consistency were confirmed using appropriate statistical measures (Cronbach's

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Alpha > 0.60), ensuring robust data collection (Cohen et al., 2018; Kitagawa, 2015; Sun, 2023).

Based on the study's objectives and theoretical background, the following hypotheses are formulated:

H1: There is a significant positive relationship between the learning climate and students' creativity.

H2: Learning styles have a significant positive influence on students' creativity.

H3: The combination of learning climate and learning styles significantly predicts students' creativity in Islamic Education.

Data were analysed using multiple linear regression, a technique appropriate for predicting relationships between independent variables (learning climate and learning styles) and the dependent variable (creativity). Prior to performing regression analysis, classical assumption tests—normality, multicollinearity, and heteroscedasticity—were conducted to ensure that the regression model met statistical assumptions (Tabachnick & Fidell, 2019). This rigorous approach enhances the reliability and interpretability of the findings (McKown, 2019).

RESULTS AND DATA ANALYSIS

This section presents the results of research based on statistical data processing. The analysis includes tests of validity, reliability, normality, linearity, heteroscedasticity, multicollinearity, and multiple linear regression. All tests are carried out to ensure the validity of the model and support scientific conclusions.

Validity Test:

The results of the validity test showed that all statement items in the variables X1 (Learning Climate), X2 (Learning Style), and Y (Creativity) had R values calculated ≥ R tables. This indicates that all items in the questionnaire are statistically valid, or able to measure the aspects referred to in this study. Thus, research instruments can be relied on to produce data that is in accordance with the research objectives

Table 2. Validias and Reliability Test Table

Variable	Number of Items	Number of Valid Items	Cronbach's Alpha	Information
Learning Climate (X1)	10	10	0,721	Reliable
Learning Style (x2)	10	10	0,689	Reliable
Creativity (Y)	10	10	0,742	Reliable

The reliability test also showed positive results, with Cronbach's Alpha value above 0.60 for all variables. This means that the instrument has good internal consistency, so that the measurement results made on the respondents are considered stable and reliable. The success of validity and reliability tests is an important basis for further data analysis. The results of this validity and reliability test are a strong basis to ensure the quality of the data in this study.

Normality Test

The normality test using Kolmogorov-Smirnov showed that all variables had a significance value above 0.05. That is, the data is normally distributed, meeting one of the main assumptions in linear regression.

E-mail address: mustofa-tohari@ubb.ac.id, syaifulok02@gmail.com, amrilsafair@gmail.com, dauda.rb@unilorin.edu.ng
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Table 3. Normality Test

Variable	Sig. (p-value)	Information
Learning Climate (X1)	0,544	Normally distributed data
Learning Style (x2)	0,473	Normally distributed data
Creativity (Y)	0,951	Normally distributed data

The normality test was carried out to ensure that the data used in the study was normally distributed. Based on the table, the significance values for the variables Learning Climate (X1), Learning Style (X2), and Creativity (Y) were 0.544, 0.473, and 0.951, respectively. All of these values are greater than 0.05, so the data is declared to be normally distributed.

Data normality is important in regression analysis because the assumption of normality guarantees the accuracy of the results of statistical analysis, such as the T and F tests.

Linearity Test

The linear relationship shows that changes in learning climate (X1) and learning style (X2) are directly proportional to changes in learning creativity (Y). This provides a basis that the linear regression model used in this study is appropriate to explain the influence of independent variables on creativity.

Table 4. Linearity Test

Variable Relationship	Sig. (p-value)	Information
Learning Climate (X1) - Creativity (Y)	0,227	Significant linear relationship
Learning Style (X2) - Creativity (Y)	0,981	Significant linear relationship

The results of the linearity test show that the relationship between the independent variables (X1 and X2) and the dependent variable (Y) is linear. This is evidenced by the significance value of Deviation from Linearity ≥ 0.05 for both variables (X1 = 0.227; X2 = 0.981). Linearity is one of the key assumptions in linear regression, ensuring that the relationship between free and bound variables can be modeled linearly

Heteroscedasticity Test

The absence of heteroscedasticity ensures that the regression results are not distorted by changes in variance error, so that the estimation of the regression coefficient becomes more accurate. This strengthens the validity of the research results in measuring the relationship between learning climate, learning style, and creativity.

Table 5 Heteroscedasticity test

Variable	Sig. (p-value)	Information
Learning Climate (X1)	0,695	No heteroscedasticity
Learning Style (x2)	0,920	No heteroscedasticity

The results of the Glejser test (see Table 4) show that there are no symptoms of heteroscedasticity in the regression model. The significance values for the Learning Climate (X1) and Learning Style (X2) variables were 0.695 and 0.920, respectively,

E-mail address: mustofa-tohari@ubb.ac.id, syaifulok02@gmail.com, amrilsafair@gmail.com, dauda.rb@unilorin.edu.ng
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which was greater than 0.05. That is, the variance of error is constant, fulfilling one of the important assumptions in linear regression.

Multicollinearity Test

The absence of multicollinearity ensures that the contribution of each independent variable to the dependent variable can be measured separately. Thus, the results of the T and F tests in the regression model can be interpreted legitimately without any bias concerns due to the correlation between independent variables.

Table 6 Multicollinearity Test

Variable	VIF	Tolerance	Information
Learning Climate (X1)	1,019	0,981	No multicollinearity
Learning Style (x2)	1,019	0,981	No multicollinearity

This table shows that there is no multicollinearity among the independent variables. The VIF value for variables X1 and X2 is 1.019, which is well below the critical limit of 10, while the tolerance value is 0.981, greater than the minimum limit of 0.10. This confirms that there is no very strong relationship between independent variables that can lead to bias in the estimation of regression parameters

Multiple Linear Regression Test

The resulting linear regression equation is Y = 18.710 + 0.240X1 + 0.269X2, which shows that each increase of one unit in Learning Climate (X1) and Learning Style (X2) will increase Creativity (Y) by 0.240 and 0.269 units, respectively. The value of this coefficient is statistically significant with a p-value of 0.028 for X1 and 0.041 for X2 (both ≤ 0.05).

Table 7 Multiple Linear Regression Test Table

Independent Variable	Regression Coefficient	Sig. (p-value)	Information
Learning Climate (X1)	0,240	0,028	Significant influence
Learning Style (x2)	0,269	0,041	Significant influence

These results show that both the learning climate and learning style contribute positively to students' creativity. Thus, this linear regression model can be used to predict creativity based on changes in the learning climate and teaching style

Test T (partial)

The T test is used to measure the partial influence of each independent variable on the dependent variable. The results of the T test showed that Learning Climate (X1) had a T value of 2.287 (p = 0.028) and Learning Style (X2) had a T value of 2.111 (p = 0.041). Both were significant at $\alpha = 0.05$, which means that each variable had a positive and significant influence on learning creativity (Y).

E-mail address: mustofa-tohari@ubb.ac.id, syaifulok02@gmail.com, amrilsafair@gmail.com, dauda.rb@unilorin.edu.ng
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Table 8. Test T

Independent Variable	T Count	T Table	Sig. (p-value)	Information
Learning Climate (X1)	2,287	1,685	0,028	Signifikan
Learning Style (x2)	2,111	1,685	0,041	Signifikan

These results confirm that both learning climate and learning style are important predictors in increasing student creativity. Thus, proper management of these two variables can encourage a significant increase in creativity.

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Test F (Simultaneous)

The results of the F test showed that simultaneously the variables X1 (Learning Climate) and X2 (Learning Style) significantly affected Y (Creativity). The calculated F value is 4.557 with p = 0.017, less than 0.05. This shows that the multiple linear regression model used is suitable for explaining the relationship between independent and dependent variables

Table 9. Test results F

F Calculate	F Table	Sig. (p-value)	Information
4,557	3,24	0,017	Signifikan

The conclusion of the F test is that both the learning climate and the learning style, when analyzed together, exert a significant influence on learning creativity. This strengthens the results of the T test, showing that a holistic approach to both variables can increase students' creativity

R Test (Coefficient of Determination)

The Adjusted R Square value of 0.148 shows that 14.8% of the variation in student creativity (Y) can be explained by independent variables, namely learning climate (X1) and learning style (X2). The rest, 85.2%, was explained by other factors that were not included in this study.

Table 10. Adjusted R Square Value

Model	Adjusted R Square	Information
Learning Climate & Learning Style	0,148	Significant contributions

Although the Adjusted R Square value is relatively small, this result still shows a significant relationship between independent and dependent variables. Further research can explore other factors, such as motivation, family support, or learning facilities, that may also influence students' creativity.

Based on the results of statistical tests, this study shows that both learning climate (X1) and learning style (X2) have a significant influence on students' creativity (Y), both partially and simultaneously. Although the Adjusted R Square shows an influence of 14.8%, it shows that other factors such as motivation, learning facilities, and family support also need to be further researched to provide a more comprehensive picture.

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DISCUSSION

The Influence of Learning Climate on Creativity

The The learning climate is a multidimensional construct that encompasses the physical, emotional, and social environment in which the learning process occurs. It is not merely the backdrop of education but an active agent that shapes how students perceive their safety to take intellectual risks. In the context of fostering creativity, the learning climate serves as the "soil" in which the seeds of creative potential can either wither or flourish. This factor is critical as it fosters an atmosphere conducive to exploring ideas, positive interactions, and the development of individual potential.

Theoretically, this finding aligns with Vygotsky's Social Development Theory, which posits that cognitive development—including creative cognition—is socially mediated. According to Vygotsky's theory, effective learning occurs when the social environment supports interactions between students and teachers or peers within the zone of proximal development (ZPD). When the learning climate is positive, the ZPD becomes a safe space for exploration rather than a zone of anxiety. A conducive environment facilitates creativity by providing opportunities for students to explore new ideas, experiment, and make decisions based on their own experiences (Vygotsky & Luria, 1978). In a classroom with a positive climate, errors are not viewed as failures but as integral parts of the creative iteration process. This psychological safety encourages students to voice unconventional ideas without fear of ridicule, which is a prerequisite for divergent thinking.

Research has consistently demonstrated that a positive learning climate correlates significantly with increased student creativity. A seminal study by (Amabile, 1996, 2017; Amabile & Pratt, 2016) concluded that a learning environment that supports creative freedom and values students' unique contributions can encourage the development of creative ideas. Amabile's Componential Theory of Creativity emphasizes that while domain-relevant skills and creativity-relevant processes are internal, the social environment is the external variable that can most immediately impact intrinsic motivation. This finding is supported by other studies indicating that a learning climate involving open communication and collaboration tends to enhance students' confidence and creativity ((Beghetto & Kaufman, 2007, 2010). When students perceive that their environment is non-controlling and informative rather than controlling and critical, their intrinsic motivation rises, directly fueling creative performance.

In the context of this study, the validity and reliability test results for the learning climate variable were high. This suggests that the specific aspects measured—such as teacher support, peer interaction, and the physical classroom atmosphere—are indeed the relevant dimensions for influencing creativity in this demographic. It confirms that students are sensitive to the nuances of their environment; they do not just "learn" content, they "read" the room to determine if creativity is welcome.

The linear regression results indicate that the learning climate (X1) has a regression coefficient of 0.240 and a significance value of 0.028. Statistically, this means that for every one-unit increase in the quality of the learning climate, there is a 0.240 unit increase in student creativity, holding other variables constant. The significance value ($p < 0.05$) confirms that this relationship is not due to random chance. This finding

E-mail address: mustofa-tohari@ubb.ac.id, syaifulok02@gmail.com, amrilsafair@gmail.com, dauda.rb@unilorin.edu.ng
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reinforces the argument that a supportive learning environment can be a catalyst for developing creativity.

However, it is crucial to interpret the magnitude of this influence. Although its influence is relatively modest (part of the Adjusted R Square = 14.8%), the learning climate remains an essential factor to be managed. A coefficient of 0.240 suggests that while climate is a significant predictor, it is not the *sole* predictor. Creativity is a complex phenomenon. Nevertheless, the environment is often the variable most under the control of educators. In practice, educators and institutions need to create enjoyable and innovative classroom atmospheres to sustain the enhancement of students' creativity over time c(Batey & Furnham, 2006). This implies moving beyond traditional rote-learning environments to dynamic spaces that allow for flexibility, humor, and intellectual autonomy.

The Influence of Learning Style on Creativity

Learning style refers to an individual's consistent preference in receiving, processing, and organising information during learning. It acts as a cognitive filter through which students interpret the world and generate responses. Recognizing the link between learning style and creativity is pivotal because creativity is essentially a high-order form of information processing. According to (Kolb, 1984), learning styles include diverging, assimilating, converging, and accommodating, each of which has unique characteristics that facilitate problem-solving and creative thinking.

- Diverging learners, who excel at viewing situations from many perspectives, are naturally inclined towards the idea-generation phase of creativity.
- Assimilating learners, who are strong in inductive reasoning, contribute to creativity by creating theoretical models and synthesizing disparate observations.
- Converging learners bring value to the creative process by finding practical uses for ideas and theories, essential for the implementation phase of innovation.
- Accommodating learners, who rely on intuition and action, drive the experimental aspect of creativity.

Thus, learning styles allow students to tailor their learning methods to align with their cognitive and emotional strengths, thereby supporting the development of new and innovative ideas.

Various studies have shown that learning styles have a positive correlation with creativity. For instance, a study by Sternberg & Grigorenko (1997) found that students with a diverging learning style are more likely to produce creative solutions as they explore a range of possibilities. This aligns with the definition of creativity as the production of novel and useful ideas. Furthermore, other research has highlighted that learning styles encouraging reflective processing and active experimentation can enhance critical thinking and innovation (Erna et al., 2021). When instruction matches a student's learning style, cognitive load is reduced for processing information, freeing up mental resources for higher-order creative thinking. Conversely, a mismatch can lead to frustration and a retreat from creative engagement.

In this study, the validity test demonstrated that all items related to learning style are relevant for assessing its impact on creativity, with a Cronbach's Alpha value of 0.689 confirming the reliability of the instrument. While 0.689 is within the acceptable range, it suggests that learning style is a broad construct with internal variations, yet robust enough to be a predictor.

E-mail address: mustofa-tohari@ubb.ac.id, syaifulok02@gmail.com, amrilsafair@gmail.com, dauda.rb@unilorin.edu.ng
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Regression analysis revealed that learning style (X2) has a coefficient of 0.269 and a significance value of 0.041. Interestingly, the coefficient for learning style (0.269) is slightly higher than that of learning climate (0.240). This suggests that individual internal cognitive preferences might have a slightly stronger direct impact on creative output than the external environment in this specific context. The significance value of 0.041 confirms the hypothesis that individual learning preferences significantly influence creativity. Additionally, the linearity test results indicate that the relationship between learning style and creativity is linear, meaning changes in learning style adaptations will result in predictable changes in creativity.

The implication here is profound for pedagogy. By understanding students' diverse learning styles, educators can tailor teaching methods to maximise each individual's creative potential (Felder & Silverman, 1998). This moves education away from a "one-size-fits-all" approach. Teachers should design tasks that require diverse cognitive approaches—brainstorming for divergers, model-building for assimilators, practical labs for convergers, and fieldwork for accommodators—ensuring that every student finds a pathway to express their creativity.

The Combined Influence of Learning Climate and Learning Style on Creativity

The combination of learning climate and learning style plays a pivotal role in creating a holistic environment that supports students' creativity. While analyzing these variables separately provides insight, real-world educational settings involve a complex interplay between the student (learning style) and the situation (learning climate). According to educational systems theory, the interaction between various elements, such as the environment and individual preferences, generates synergistic effects on learning outcomes (Bronfenbrenner, 1979). This aligns with the "Person-Environment Fit" theory, which suggests that outcomes are best when the individual's characteristics are compatible with the environment's demands.

When a supportive learning climate is combined with an understanding of students' learning styles, the expected result is a more significant enhancement in creativity. For example, a student with a "Diverging" learning style (who needs to gather information and brainstorm) will thrive immensely in a learning climate that prioritizes open discussion and psychological safety (High Climate). However, that same student might struggle to be creative in a rigid, silence-heavy classroom (Low Climate), even if they have high creative potential. The environment moderates the expression of the style.

Previous research supports the importance of a multidimensional approach to learning. For example, a study by Torrance (1998) found that students who learn in supportive environments with methods aligned to their learning styles show significant improvements in creativity. Torrance, a pioneer in creativity testing, emphasized that creativity does not occur in a vacuum. Similarly, a study by Csikszentmihalyi (1996) highlighted that creativity is influenced not only by individual factors such as learning style but also by external systems such as a supportive learning environment. Csikszentmihalyi's Systems Model of Creativity posits that creativity is the result of the interaction between the Individual (person), the Domain (culture/rules), and the Field (gatekeepers/teachers). In this study, "Learning Style" represents the Individual, and "Learning Climate" represents the micro-level Field.

In this study, the F-test results show that learning climate and learning style simultaneously influence creativity, with a significance value of 0.017. This p-value (<

E-mail address: mustofa-tohari@ubb.ac.id, syaifulok02@gmail.com, amrilsafair@gmail.com, dauda.rb@unilorin.edu.ng
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0.05) serves as strong statistical evidence that the model encompassing both variables is a valid predictor of creativity. It indicates that a holistic approach involving both variables is more effective than focusing on a single variable.

Based on an Adjusted R Square of 0.148, the results also show that 14.8% of the variation in students' creativity can be explained by the learning climate and learning style together. It is important to contextualize this number. In social science research, particularly regarding complex human behaviors like creativity, an R Square of nearly 15% is meaningful. It implies that while these two factors are significant, creativity is a highly multifactorial trait. Although the contribution is modest, these findings underscore the importance of integrating environmental and individual-based approaches in teaching strategies. It suggests that by optimizing the climate and accommodating styles, schools can control a significant portion of the variance in student creative outcomes.

Other Factors Influencing Creativity

The statistical analysis reveals that while learning climate and learning style are significant predictors, approximately 85.2% of the variance in creativity remains unexplained by these two variables (based on the Adjusted R Square of 14.8%). This indicates that in addition to learning climate and learning style, creativity is influenced by various external and internal factors that were not the primary focus of this specific regression model. Understanding these factors is crucial for a comprehensive educational strategy.

Primary among these is motivation. According to Deci and Ryan's Self-Determination Theory (1985), intrinsic motivation is a primary driver of creativity. Intrinsic motivation—the drive to engage in an activity for its own sake—can be enhanced through the provision of autonomy, competence, and relatedness. While learning climate affects motivation, intrinsic drive is also a distinct personal trait. Students who are deeply curious are often creative regardless of the style or climate.

Furthermore, family support plays a critical role. Strong family support often contributes to higher confidence in experimenting and generating new ideas. Research by Amabile & Pratt (2016) demonstrated that environments supporting creativity extend beyond formal learning settings. If a student's home environment discourages questioning or deviation from the norm, the school's efforts to foster creativity may be dampened. Conversely, recognition of creativity at home reinforces the behaviors learned at school. In the context of Indonesia, a study by Hasani & Kurniawati (2024) found that family involvement in the teaching-learning process contributes to improved creative thinking skills, highlighting the cultural dimension of education where family and school are deeply intertwined.

Additionally, learning facilities and technology are increasingly relevant. Adequate learning facilities significantly impact students' creative idea development by providing the physical tools necessary for creation (e.g., art supplies, laboratories, digital devices). The modern educational landscape also introduces the variable of digital literacy and AI, which offers new tools for divergent thinking.

This study, with an Adjusted R Square of 14.8%, highlights substantial scope for exploring other factors influencing creativity. It suggests that future research should not view Learning Climate and Style in isolation. Future research could focus on the impact of educational technology, cultural diversity, social interactions, and specific

E-mail address: mustofa-tohari@ubb.ac.id, syaifulok02@gmail.com, amrilsafair@gmail.com, dauda.rb@unilorin.edu.ng
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pedagogical interventions (like Project-Based Learning) in fostering students' creativity. By integrating these variables into broader models, more comprehensive teaching strategies can be designed to significantly enhance students' creativity. The goal is to build an educational ecosystem where the "unexplained variance" is gradually illuminated, allowing educators to pull every possible lever to support the next generation of innovators.

CONCLUSION

This study was conducted to determine the extent to which Learning Climate and Learning Style act as predictors of Student Creativity. Based on the rigorous analysis of the data and the discussion of the findings, several comprehensive conclusions can be drawn.

First, the research empirically confirms that both Learning Climate and Learning Style significantly influence students' creativity, both partially and simultaneously. The statistical analysis yielded a coefficient of determination (R^2) of 0.148. This figure indicates that 14.8% of the variance in student creativity can be directly explained by the quality of the classroom environment and the accommodation of individual learning styles. While this percentage might appear modest, it is statistically significant and affirms that external environmental factors and internal cognitive preferences are foundational elements in fostering a creative educational atmosphere.

Second, the finding that Learning Climate positively impacts creativity suggests that students require a psychologically safe and supportive environment to take intellectual risks. When the classroom atmosphere encourages exploration and minimizes the fear of failure, students are more likely to demonstrate divergent thinking. Similarly, the significance of Learning Style implies that creativity is not a "one-size-fits-all" attribute; rather, it flourishes when teaching methods align with how students naturally process information—whether they are divergent, assimilating, converging, or accommodating learners.

Third, a critical insight from this study is the identification of the "unexplained variance." The data reveals that 85.2% of the factors influencing creativity lie outside the variables of Learning Climate and Learning Style. This substantial percentage highlights the multidimensional and complex nature of creativity. It suggests that while the classroom environment and learning styles are necessary conditions, they are not sufficient on their own. Other potent variables—such as intrinsic motivation, technological literacy, family support, socioeconomic background, and peer influence—likely play a dominant role in shaping a student's creative potential.

Finally, the implication of this study extends beyond the statistical figures. It calls for a paradigm shift in pedagogical strategies. Educators cannot rely solely on curriculum delivery; they must curate an ecosystem that balances a supportive climate with differentiated instruction. The relatively low contribution of the studied variables (14.8%) is not a limitation of the study's value, but rather a roadmap for future research. It underscores the urgent need for a more holistic approach to educational research that integrates psychological, social, and technological dimensions to fully decode the mechanisms of student creativity. Therefore, fostering creativity requires a concerted effort to optimize the variables we can control (climate and style) while actively exploring and supporting the broader factors that constitute the remaining 85.2%

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E-mail address: mustofa-tohari@ubb.ac.id, syaifulok02@gmail.com, amrilsafair@gmail.com, dauda.rb@unilorin.edu.ng
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