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From Pedagogy to Digital Cultural Literacy: Examining the Correlation between Teachers' Knowledge of Bloom's Taxonomy, Character Education, and Digital-Based Interpretation of Javanese Philosophy

Sulton[1], Yudan Hermawan[2], Ardhana Januar Mahardhani[3], Nurtina Irsad Rusdiani[4], Betty Yulia Wulansari[5], Restu Mufanti[6]

[1]Department of Civic Education, Faculty of Teacher Training and Education, Universitas Muhammadiyah Ponorogo, Ponorogo, Indonesia
[2]Department of Non Formal Education, Faculty of Education Science, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia
[3]Department of Pedagogy, Postgraduate Program, Universitas Muhammadiyah Ponorogo, Ponorogo, Indonesia
[4,5]Department of Early Childhood Education, Faculty of Teacher Training and Education, Universitas Muhammadiyah Ponorogo, Ponorogo, Indonesia
[6]Doctor of Philosophy, Faculty of Arts and Social Sciences, University of Technology Sydney, Sydney, Australia

Article Info

ABSTRACT

Purpose of the study: This study aims to analyze the relationship between teacher's knowledge of Bloom's Taxonomy and character education with their digital-based understanding of the Javanese philosophy *Sura Dira Jayaningrat Lebur Dening Pangastuti* within technology-integrated cultural education enviroments.

Methodology: A quantitative correlational method was implemented using a digital Likerts-scale questionnaire administered through an online platform. Data were analysed with SPSS using validity and reliability test, Pearson product-moment correlation, and multiple regression analysis to measure relationships among Bloon's Taxonomy knowledge, character education knowledge, and digital-based philosophical understanding.

Main Findings: The study reveals significant positive correlations between teachers' knowledge of Bloom's Taxonomy and their digital-based understanding of Javanese philosophy. Teachers' knowledge of Indonesian character education also shows a strong and significant relationship. Combined, both variables explain 92,8% of the variance in teacher's ability to interpret and internalize philosophical values within technology-supportes cultural learning.

Novelty/Originality of this study: This study offers a new framework linking pedagogical knowledge with digital cultural interpretation, demonstrating how technology enhances teachers' ability to translate Bloom's Taxonomy and character education technology by integrating local wisdom, digital media, and oedagogical theory into a coherent model for cultural preservation.

Corresponding Author:

Sulton,
Department of Civic Education, Faculty of Teacher Training and Education, Universitas Muhammadiyah Ponorogo,
Budi Utomo Road No. 10, Ronowijayan, Siman, Ponorogo, East Java, 63471, Indonesia
Email: sulton@umpo.ac.id

1. INTRODUCTION

Education that focuses on local culture plays a crucial role in shaping national identity and strengthening students' character. In Ponorogo Regency, cultural education is inseparable from the existence of Reog art, which was designated as a UNESCO Intangible Cultural Heritage in 2024 [1]-[3] in the category of Urgent Protection Needs. This decision has the consequence that Reog must always be protected, preserved, and integrated into education so that its local wisdom values continue to exist amidst the wave of globalization [4]. Recent studies show that education based on cultural heritage can be an effective way to pass on good values and increase the competitiveness of the younger generation [5]. The rapid development of digital learning technologies has opened new opportunities to preserve and teach cultural heritage through multimedia documentation, virtual performances, and online cultural archives.

One of the main frameworks in developing Ponorogo's cultural education is the application of educational objectives according to Bloom's Taxonomy [6]-[8], which emphasizes cognitive, affective, and psychomotor aspects. The use of this taxonomy allows teachers to assess students' intellectual abilities while also internalizing cultural values in the aspects of attitudes and skills. Recent research shows that combining Bloom's taxonomy with culture-focused learning can increase student engagement and strengthen the formation of their cultural identity. Therefore, teachers play a crucial role in linking contemporary educational theory with local cultural preservation practices. Technology-assisted learning platforms further enable teachers to design interactive cultural modules based on Bloom's hierarchy, making cultural concept more accesible and engaging for students.

Furthermore, character education in Indonesia provides a solid foundation for supporting Ponorogo's cultural education. Values such as spirituality, honesty, tolerance, hard work, love of the homeland, and responsibility are essential components of character education, aligned with the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti. This philosophy highlights the importance of self-control, wisdom, humility, compassion, and strength of spirit as the foundation for building student character. International studies show that character education integrated with local wisdom can strengthen social resilience and strengthen community ties amidst contemporary challenges [9]-[11]. The development of the Culture School of Ponorogo (CSoP) emerged as an educational innovation that combines local Ponorogo values with national education goals. This concept seeks to create an educational ecosystem that focuses not only on academic aspects but also on internalizing cultural values as part of student identity development. This model aligns with the global trend in education that focuses on cultural heritage, positioning schools as centers for cultural preservation and innovation. As a result, improving teachers' understanding of Bloom's Taxonomy and character education is a crucial factor in realizing CSoP as a concrete implementation of locally based education.

However, challenges remain, particularly related to teachers' lack of understanding of integrating a culturally based curriculum with national education standards. Many educators still need to improve their skills in designing learning processes that integrate cognitive, affective, and psychomotor aspects with Javanese philosophical values. Global research shows that the effectiveness of education rooted in cultural heritage is greatly influenced by teachers' ability to understand cultural values and the pedagogical skills to integrate them into the learning process [12]-[14]. Consequently, improving teacher skills is an essential factor in this research. The integration of digital tools-such as learning analytics, intelligent tutoring systems, and virtual cultural simulations-offers new pathways for enhancing teachers' capacity to deliver culturally grounded instructions.

Although the educational literature has extensively discussed the application of Bloom's Taxonomy in the context of digital learning and technology, most studies focus on developing pedagogical strategies to improve cognitive learning outcomes without explicitly linking them to local wisdom-based character education or specific cultural philosophies, as examined in this study. For example, articles on technology integration in learning that utilize Bloom's Taxonomy emphasize the development of higher-order thinking skills through digital media but fail to explore how teachers' knowledge of this framework contributes to the internalization of local cultural values in learning practices [15].Meanwhile, research in the educational sciences that integrates Bloom's Taxonomy with technology tends to be geared toward maximizing student engagement in digital scenarios (e.g., studies of flipped learning or other technology-based learning). Consequently, it under-emphasizes the role of teacher knowledge as a predictor of teachers' ability to interpret or internalize specific cultural values using digital media. (Another example in the context of IoT education demonstrates the challenges of applying this taxonomy to technology curricula without explicit links to cultural value dimensions.) [16]. Furthermore, the literature related to character education based on local wisdom shows a tendency towards more descriptive studies or general character development models, but not many have quantitatively linked the relationship between teachers' pedagogical knowledge and specific digital understanding of certain cultural philosophies, leaving a significant empirical gap for this research to fill.

The novelty of this research lies in the development and empirical testing of a conceptual framework that connects teachers' pedagogical knowledge specifically mastery of Bloom's Taxonomy and character education with their ability to understand and interpret the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti through digital learning resources in a technology-based educational environment. Different from previous research that generally examines Bloom's Taxonomy, character education, or culture-based learning

separately, this study explicitly positions teachers' knowledge as the main predictor of digital cultural literacy, not merely as curriculum implementers. Furthermore, this research is one of the first quantitative studies to specifically examine the relationship between pedagogical competence and the internalization of local philosophical values based on digital media, thus expanding the discourse of cultural education from a descriptive approach to an analytical model based on empirical evidence. Thus, this research not only enriches the study of technology-integrated cultural education, but also offers a new conceptual contribution in bridging pedagogical theory, national character education, and the preservation of local wisdom through educational technology.

Based on this context, this study aims to analyze the relationship between teachers' knowledge of educational objectives based on Bloom's Taxonomy and Indonesian character education and their understanding of the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti. This study is expected to provide conceptual and practical contributions to the development of the Culture School of Ponoragan as an example of education based on local wisdom. Through this approach, Ponorogo cultural education is expected to function not only as a tool to preserve traditional arts, but also as a medium in shaping the character of the nation that is in accordance with the demands of the global era while supporting the achievement of sustainable development goals (SDGs 4 and 11).

2. THE COMPREHENSIVE THEORETICAL BASIS

2.1. Cultural Learning Design Based on Bloom's Taxonomy

Bloom's Taxonomy is a conceptual framework developed by Benjamin Bloom [8] to classify learning objectives into three main domains: cognitive, affective, and psychomotor. This taxonomy aims to provide guidance to educators in designing, implementing, and evaluating the learning process in a more directed and measurable manner. In the educational context, Bloom's Taxonomy serves as a tool for developing learning objectives that encompass cognitive, affective, and psychomotor aspects in stages, from simple to complex levels of ability. This conceptual framework is relevant to the development of culture-based learning, in this case integrating local cultural heritage such as Reog Ponorogo in learning, especially as a guide in developing learning experiences that are not only oriented towards achieving knowledge (cognition), but also on the formation of attitudes, values (affect), and skills (psychomotor) of students [17].

Bloom's three main learning domains: cognitive, affective, and psychomotor. They provide guidance for educators in formulating learning objectives, designing learning strategies appropriate to students' ability levels, and developing evaluation tools relevant to expected learning outcomes. Thus, this framework not only helps create a systematic learning experience but also ensures that learning occurs in a gradual and structured manner, aligned with student development.

Of the three learning domains in Bloom's taxonomy, the cognitive domain emphasizes thinking skills, ranging from basic skills such as remembering to complex skills such as creating. The affective domain focuses on attitudes, values, and emotions, while the psychomotor domain relates to physical and technical skills. Bloom's Taxonomy was subsequently revised by adding a knowledge dimension and changing the cognitive categories to be more action-oriented, such as understanding and creating. This revision makes Bloom's Taxonomy more relevant for application in modern learning, which emphasizes 21st-century skills. The description of the Bloom's Taxonomy classification as referred to is as follows:

Cognitive Domain

The cognitive domain emphasizes students' intellectual abilities [18]-[20]. In culture-based learning, teachers can develop indicators that refer to cognitive levels ranging from remembering to creating.
1. Remembering: Students can name important figures in the history of Reog Ponorogo.
2. Understanding: Students explain the symbolic meaning of the dadak peacock in a Reog performance.
3. Applying: Students use Ponorogo folklore as material for writing narratives in Indonesian language lessons.
4. Analyzing: Students compare the function of Reog Ponorogo with other regional performing arts.
5. Evaluating: Students assess the role of the local government in preserving Reog.
6. Creating: Students design an art project in the form of a poster or documentary video about the philosophy of Reog for the younger generation.

This framework is in line with the principles of contextual teaching and learning where new knowledge is more meaningful if it is linked to students' cultural experiences.

Affective Domain

The affective domain emphasizes attitudes, feelings, and values [21]-[23]. In culture-based learning, this aspect is crucial to ensuring students not only know but also appreciate and internalize local culture.
1. Receiving: Students show interest in attending a Reog performance.
2. Responding: Students actively discuss the value of courage in Reog.

3. Assessing: Students demonstrate pride when describing Reog as Ponorogo's identity.
4. Organizing: Students integrate the value of cooperation from Reog into group activities at school.
5. Internalizing: Students use Reog as inspiration to foster a sense of nationalism.

This aligns with the concept of value-based education, which emphasizes education as a vehicle for character formation through cultural values.

Psychomotor Domain

The psychomotor domain relates to physical skills and creative expression. In the context of culture-based learning, this includes student engagement in hands-on practice, ranging from the most basic imitation to the most advanced creation [24]-[26].

1. Imitation: Students try out the basic movements of the Jathil dance in Reog.
2. Manipulation: Students practice playing the accompanying Reog instruments (drums, gongs).
3. Articulating: Students are able to perform simple roles in a mini-Reog performance at school.
4. Adapting: Students develop variations of movements or storylines for school festivals.
5. Creating: Students design new works of art inspired by Reog aesthetics, such as graphic design or contemporary drama.

This approach is related to experiential learning theory Kolb (1984), which emphasizes the importance of concrete experiences for developing deep understanding

2.2. Character Education in Indonesian Cultural Context

Character is defined as the psychological, moral, or ethical traits that distinguish one person from another [27]-[29]. Thus, character is a unique set of values, both ingrained within the individual and manifested in behavior. In practice, character manifests itself in the spontaneous (automatic) behavior exhibited by individuals in response to events or situations. Character coherently emanates from the thoughts, feelings, intentions, and physical activity of an individual or group [30]-[32].

In this sense, the behavior of a person with character is essentially the embodiment of a total psychological function encompassing all human potential (cognitive, affective, conative, and psychomotor) and a total sociocultural function within the context of interactions (within the family, educational institutions, and society) and lasting throughout life. The configuration of character within the context of this total psychological and sociological-cultural process can be categorized as the processes of the heart, thoughts, emotions, and intentions. These four psychosocial processes must be cultivated and developed holistically and coherently, interconnected, and complementary within a character education process as a manifestation of the nation's noble values.

Character education is an integral part of the education system that aims to shape individuals with moral, ethical, and responsible personalities [33]-[35]. The values in character education serve as guidelines that help students face life's challenges with a positive and constructive attitude. The Ministry of Education and Culture has established 18 core values for character education, including religiosity, honesty, tolerance, discipline, hard work, creativity, independence, democracy, curiosity, national spirit, love of country, appreciation for achievement, friendship/communication, love of peace, love of reading, environmental awareness, social awareness, and responsibility. These values are designed to create individuals who excel not only academically but also possess strong character. Through education, these values are introduced, sown, grown and maintained within students.

The 18 main values of character education established by the Ministry of Education and Culture are: (1) Religious [36]-[38], namely an attitude of obedience and compliance in understanding and implementing the teachings of the religion (beliefs) that are adhered to, such as a tolerant attitude towards the implementation of other religious worship (beliefs), as well as living in harmony and side by side; (2) Honest [39], [40], namely attitudes and behaviors that reflect the unity between knowledge, words, and actions (knowing what is right, saying what is right, and doing what is right) so that the person concerned becomes a person who can be trusted; (3) Tolerance, namely attitudes and behaviors that reflect respect for differences in religion, belief systems, tribes, customs, languages, races, ethnicities, opinions, and other things that are different from oneself consciously and openly, and can live peacefully amidst these differences [41]-[43]; (4) Discipline namely habits and actions that are consistent with all forms of applicable regulations or rules [44], [45]; (5) Hard work, namely behavior that shows serious efforts (fighting to the last drop of blood) in completing various tasks, problems, jobs, etc. as well as possible [46], [47]; (6) Creative, namely attitudes and behaviors that reflect innovation in various aspects in solving problems, so that they always find new ways, even new results that are better than before [48]-[50]; (7) Independent, namely attitudes and behaviors that do not depend on others in completing various tasks or problems [51].

However, this does not mean that one cannot work collaboratively, but rather that one should not throw tasks and responsibilities to others; (8) Democratic, namely attitudes and ways of thinking that reflect equal rights and obligations fairly and evenly between oneself and others [52], [53]; (9) Curiosity, namely ways of thinking, attitudes, and behaviors that reflect curiosity and inquisitiveness towards everything that is seen, heard, and studied in more depth [54]-[56]; (10) National spirit or nationalism, namely attitudes and actions that place the interests

of the nation and state above personal or individual and group interests [57], [58]; (11) Love of the homeland namely attitudes and behaviors that reflect a sense of pride, loyalty, care, and high appreciation for language, culture, economy, politics, and so on, so that it is not easy to accept offers from other nations that can harm one's own nation [59]-[61]; (12) Appreciating achievements, namely an open attitude towards the achievements of others and acknowledging one's own shortcomings without reducing the spirit of higher achievement [62]-[64]; (13) Communicative, likes to be friendly or proactive, namely an open attitude and action towards others through polite communication so that good collaborative cooperation is created [65], [66]; (14) Loves peace, namely an attitude and behavior that reflects a peaceful, safe, calm and comfortable atmosphere for his presence in a particular community or society; (15) Likes to read, namely a habit without coercion to provide special time to read various information, whether books, journals, magazines, newspapers, and so on, so that it creates policies for himself [67], [68]; (16) Environmental care, namely attitudes and actions that always strive to protect and preserve the surrounding environment [69], [70]; (17) Social care namely attitudes and actions that reflect concern for other people and communities who need them [71], [72]; and (18) Responsibilitynamely a person's attitude and behavior in carrying out their duties and obligations, both related to themselves, social, community, nation, state, and religion. [73]

2.3. Javanese Philosophy "Sura Dira Jayaningrat Dening Pangstuti" in Culture School of Ponoragan (CSoP)

The folk legend in the Bantrangin version of Reog Ponorogo performance – through its characters, scenes, and symbolism such as: Singo Barong vs Merak, Klana Sewandana who proposed with all his love and wisdom, as well as the roles of Warok and Bujang Ganong – shows the manifestation of one of the Javanese philosophical verses "Sura Dira Jayaningrat, Lebur Dening Pangstuti". The Javanese philosophy "Sura Dira Jayaningrat Lebur Dening Pangastuti" is an expression in Javanese philosophy that was said aloud by King Kelono Sewandono along with the swing of his whip "samandiman" which subdued Singobarong's arrogance [74], [75]. Through the Reog performance (visual and dramatic scenes) and its textual expression (particularly when the Javanese philosophical verse is spoken by King Klono Sewandono), this legend emphasizes that all forms of violence and domination can be melted by beauty, charm, wisdom, and compassion a local wisdom relevant to the needs of character education in the modern era.

The Javanese philosophy of "Sura Dira Jayaningrat Lebur Dening Pangastuti" embodies principles universally recognized as the keys to success in life. Its core principles are patience, perseverance, and persistence in the process of achieving goals. This principle encourages each individual to be resilient and never give up in various situations. Even in the most uncomfortable situations, this fundamental principle will guide us to handle them with controlled steps and avoid counterproductive violence. The Javanese philosophy of "Sura Dira Jayaningrat Lebur Dening Pangastuti" reminds us to never give up in fighting for our dreams. Success requires these principles to be realized.

The philosophy of Suro Diro Jayaningrat Lebur Dening Pangastuti holds profound meaning and relevance not only in traditional contexts but also in modern life. This philosophy also teaches that true strength lies not in physical ability or power, but in good character. This expression emphasizes that all forms of worldly power such as courage, ambition, power, and lust must be conquered or melted by pangastuti, namely wisdom, gentleness, and self-control. In modern life full of challenges and dynamics, this philosophy provides important guidelines on how one can live harmoniously and meaningfully in various aspects of life. Some of the values derived from this philosophy are as follows: The Pangastuti philosophy teaches seven main values that guide humans in managing themselves and social relationships. First, self-control is an important foundation for restraining impulsive urges and avoiding harmful reactive attitudes. With this ability, one can reduce conflict and choose wise responses based on gentleness. Second, wisdom directs people to respond to conflict with reflective thought, empathy, and ethics, rather than violence. This value emphasizes the importance of cross-perspective understanding in maintaining social harmony.

Third, humility serves as a counterbalance to ambition and power; with humility, one opens up space for dialogue, accepts feedback, and recognizes one's limitations, thus making relationships healthier and more productive. Fourth, compassion and empathy teach that aggression should not be countered with revenge, but with calming attention, which can soften hearts and build reconciliation. Fifth, peaceful love emphasizes a pro-cooperative orientation, namely, upholding the restoration of relationships above personal victory. This attitude fosters social cohesion and strengthens solidarity within the community. Sixth, responsibility emphasizes that gentleness does not mean passivity, but rather is accompanied by the moral courage to correct mistakes, admit mistakes, and take concrete steps to restore relationships. Finally, inner strength is the moral fortitude, patience, and serenity that enable a person to face pressure without succumbing to violence. This strength is what truly empowers humans to overcome challenges with a magnanimous spirit, while simultaneously maintaining mental health and the quality of relationships. With these seven values, Pangastuti serves as a life guide that balances courage and gentleness, and provides a peaceful path to more meaningful success.

This research on the Culture School of Ponoragan (CSoP) concept requires further validation, one of which is through a correlational research approach to strengthen the relationship between the variables that have been formulated. The research framework emphasizes that teacher knowledge is a fundamental factor in bridging educational goals, character education, and understanding of local philosophy as a foundation for developing cultural schools. Therefore, a correlation test between the variables of teacher knowledge regarding educational goals (Bloom's Taxonomy), Indonesian character education, and understanding of the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti will provide empirical legitimacy to the proposed theoretical assumptions. This validation not only strengthens the scientific basis of CSoP but also ensures that the concept is truly relevant, contextual, and can be effectively applied in the development of cultural schools based on local wisdom

3.   RESEARCH METHOD

3.1. Research Framework

This research framework is based on the belief that teacher knowledge is a crucial factor in linking educational objectives, character education, and understanding local philosophy as the basis for developing cultural schools. Variable X1, namely teacher knowledge of the educational objectives of Bloom's Taxonomy in Indonesian Cultural Education, provides a conceptual foundation for achieving students' cognitive, affective, and psychomotor domains. Variable X2, namely teacher knowledge of Indonesian character education in Indonesian Cultural Education, emphasizes the importance of strengthening character values in local cultural learning. Both variables are assumed to have a positive and significant relationship with variable Y, namely teacher knowledge of understanding the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti as the concept of the Culture School of Ponoragan. Thus, teacher knowledge of both Bloom's Taxonomy educational objectives and Indonesian character education correlates positively and significantly with their understanding of Javanese philosophy. This shows that the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti as the concept of the Culture School of Ponoragan is proven to be in accordance with the direction of Indonesian education and character education goals, so it is worthy of being used as a foundation in developing a cultural school based on local wisdom.
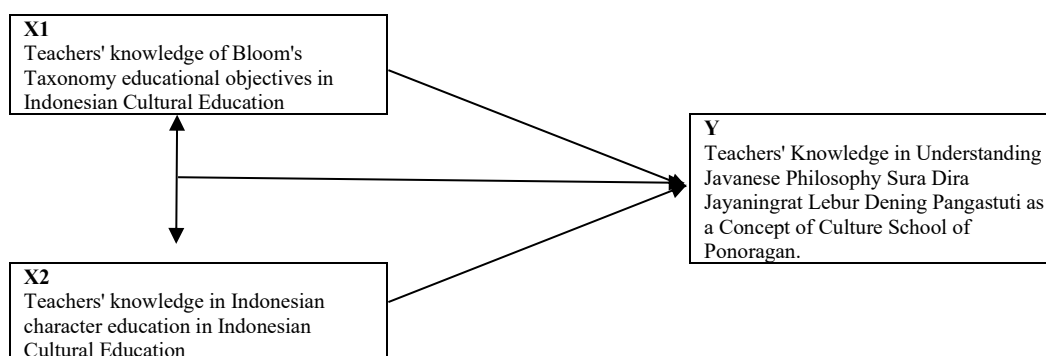

Figure 1. Framework of thought

3.2. Type of Research

This study uses a quantitative correlational method to examine the relationship between teachers' understanding of educational objectives and Javanese philosophy in the context of the development of the Culture School of Ponoragan. The correlational quantitative method is a research approach that aims to measure and analyze the degree of relationship between two or more variables statistically without manipulating these variables [76]-[78]. Specifically, this study focuses on three main aspects: (1) examining the relationship between teachers' knowledge of educational objectives according to Bloom's Taxonomy and their understanding of the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti as the conceptual foundation of the Culture School of Ponoragan; (2) identifying the relationship between teachers' knowledge of Indonesian character education in Ponorogo cultural education and their understanding of this Javanese philosophy; and (3) analyzing the simultaneous relationship between teachers' knowledge of educational objectives according to Bloom's Taxonomy and Indonesian character education and their understanding of the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti as the foundation for the development of the Culture School of Ponoragan.

3.3. Research Subjects

The subjects of this study were 37 teachers involved in local arts and culture education in Ponorogo Regency, specifically teachers who have implemented Ponorogo Cultural Education in their classrooms and through extracurricular programs, such as the Reog Ponorogo arts program. Purposive sampling is a sampling technique in which research subjects are deliberately selected based on specific criteria relevant to the objectives of the study [79]-[81]. In this study, the research subjects were selected using purposive sampling by considering their direct involvement and strategic role in preserving local cultural values and instilling character education in students through hands-on learning.

3.4. Data Collection Techniques

The research instrument used was a Likert-type questionnaire, structured based on indicators for each research variable. The questionnaire items were systematically structured to accurately describe the aspects being measured. Before being distributed to respondents, the questionnaire underwent expert judgment to ensure content validity, ensuring that each item was truly relevant, representative, and aligned with the research objectives. The following table presents the variables and indicators used in this study. This table is designed to provide a clear overview of each research variable and its accompanying indicators

Table 1. Research Variables and Indicators

	Variabel X1	Variabel X2		Variabel Y
Variables	Teachers' knowledge in Bloom's Taxonomy educational objectives in Indonesian Cultural Education	Teachers' knowledge in Indonesian character education in Indonesian Cultural Education		Teachers' knowledge in understanding Javanese philosophy "Sura Dira Jayaningrat Lebur Dening Pangastuti" in the CSoP Concept
Indicators	affective psychomotor cognitive domain	1. Religious 2. Honest 3. Tolerant 4. Disciplined 5. Hardworking 6. Creative 7. Independent 8. Democratic 9. Curiosity 10. National Spirit	11. Love of the Homeland 12. Appreciating Achievement 13. Friendly/ Communicative 14. Peace-loving 15. Love of Reading 16. Environmentally conscious 17. Socially conscious 18. Responsible	*Self-Control* *Wisdom* *Humility* *Compassion And Empathy* *Peaceful Love* *Responsibility* *Inner Strength*

3.5. Data Analysis

The data analysis technique in this study was carried out quantitatively with the stages of prerequisite testing and inferential analysis. The Likert scale questionnaire data was first tested for validity using Pearson product moment correlation and its reliability using Cronbach's Alpha. Next, the first and second hypotheses were analyzed using product moment correlation to determine the partial relationship between variables X1 and Y and X2 and Y. The third hypothesis was analyzed using multiple linear regression to determine the simultaneous relationship between variables X1 and X2 to variable Y, by first fulfilling the assumptions of residual normality, heteroscedasticity, multicollinearity, and autocorrelation, at a significance level of 0.05. Data analysis in this study used the help of SPSS version 25.

4.   RESULTS AND DISCUSSION

4.1. Measurement Model Evaluation

The measurement model evaluation was conducted to ensure that all research instruments met acceptable standards of validity and reliability prior to hypothesis testing. This step is essential to confirm that the observed variables accurately represent the underlying constructs being measured, namely teachers' knowledge of Bloom's Taxonomy educational objectives (X1), teachers' knowledge of Indonesian character education (X2), and teachers' understanding of the Javanese philosophy *Sura Dira Jayaningrat Lebur Dening Pangastuti* (Y). Construct validity was assessed using the Pearson product–moment correlation by comparing item–total correlation coefficients with the critical r-value (r-table = 0.3246, df = 35, α = 0.05). To provide an overview of the validity test results across

all constructs, Table 2 presents a summary of the number of items tested and their conformity with the established validity criterion.

Table 2. Summary of Validity Test Results

Variable	Number of Items	Validity Criterion (r > 0.3246)	Result
X1 – Teachers' Knowledge of Bloom's Taxonomy Educational Objectives	12	All items exceeded r-table	Valid
X2 – Teachers' Knowledge of Indonesian Character Education	36	All items exceeded r-table	Valid
Y – Teachers' Understanding of Javanese Philosophy	14	All items exceeded r-table	Valid

As shown in Table 2, all measurement items for variables X1, X2, and Y demonstrated item–total correlation coefficients exceeding the critical value, indicating that each item was capable of adequately measuring its intended construct. These results confirm that the instruments possess satisfactory construct validity and are appropriate for further statistical analysis.

Following the assessment of validity, reliability analysis was conducted to examine the internal consistency of each construct. Reliability was evaluated using Cronbach's alpha coefficient, which reflects the degree to which the items within each variable consistently measure the same underlying concept. A summary of the reliability test results is presented in Table 3.

Table 3. Reliability Test Results

Variable	Number of Items	Cronbach's Alpha Range	Reliability Level
X1 – Bloom's Taxonomy Educational Objectives	12	0.70 – 0.90	High
X2 – Indonesian Character Education	36	> 0.70 – > 0.90	High to Very High
Y – Javanese Philosophy Understanding	14	0.50 – 0.90	Moderate to High

As indicated in Table 3, all constructs achieved acceptable to excellent levels of reliability. Variable X1 exhibited high internal consistency, while variable X2 demonstrated high to very high reliability across its items. Variable Y showed moderate to high reliability, which remains acceptable for exploratory and correlational research in educational and cultural studies. Overall, these findings confirm that the measurement instruments used in this study are both valid and reliable, thereby providing a robust foundation for subsequent assumption testing and inferential statistical analyses.

3.2. Assumption Testing for Inferential Analysis

Assumption testing was conducted to ensure that the research data met the basic requirements of linear regression-based inferential statistical analysis. The assumptions tested included normality, heteroscedasticity, multicollinearity, and autocorrelation. Meeting these assumptions is crucial to ensure the validity and reliability of the results of the analysis of relationships between variables.

A normality test was conducted to determine whether the data distribution in the research variables follows a normal distribution. In this study, normality was tested using a statistical significance approach, with a significance value (α) greater than 0.05 indicating normally distributed data. Table 4 presents the results of the normality test for all research variables.

Table 4. Normality Test Results

Variable	Significance Value (α)	Criterion	Conclusion
Teachers' Knowledge of Bloom's Taxonomy (X1)	> 0.05	α > 0.05	Normal distribution
Teachers' Knowledge of Character Education (X2)	> 0.05	α > 0.05	Normal distribution
Teachers' Understanding of Javanese Philosophy (Y)	0.102	α > 0.05	Normal distribution

Based on the results in Table 4, the significance value for normality is 0.102, which is greater than the minimum limit of 0.05. This indicates that the data for variables X1, X2, and Y are normally distributed. Thus, the assumption of normality, a prerequisite for parametric statistical analysis, has been met. A heteroscedasticity test

is then performed to determine whether there is inequality in the residual variances in the regression model. A good regression model requires the absence of heteroscedasticity, which is indicated by the absence of a significant relationship between the independent variables and the residuals.

The results of the heteroscedasticity test are presented in Table 5.

Table 5. Heteroscedasticity Test Results

Independent Variable	Significance Value (α)	Criterion	Conclusion
Bloom's Taxonomy Knowledge (X1)	> 0.05	$\alpha > 0.05$	No heteroscedasticity
Character Education Knowledge (X2)	> 0.05	$\alpha > 0.05$	No heteroscedasticity

Table 5 shows that all independent variables have significance values above 0.05. This indicates the absence of a non-constant residual variance pattern. Thus, the regression model used in this study is free from heteroscedasticity and suitable for further analysis. A multicollinearity test was then conducted to ensure there was no excessive correlation between the independent variables in the regression model. The indicators used were the Tolerance and Variance Inflation Factor (VIF) values, with the criteria being Tolerance > 0.10 and VIF < 10.

The results of the multicollinearity test are shown in Table 6.

Table 6. Multicollinearity Test Results

Independent Variable	Tolerance	VIF	Criterion	Conclusion
Bloom's Taxonomy Knowledge (X1)	0.642	1.557	Tolerance > 0.10; VIF < 10	No multicollinearity
Character Education Knowledge (X2)	0.642	1.557	Tolerance > 0.10; VIF < 10	No multicollinearity

Based on Table 6, all independent variables have a Tolerance value greater than 0.10 and a VIF value far below 10. Thus, it can be concluded that there is no multicollinearity between independent variables, so that both can be used simultaneously in the regression model. An autocorrelation test was then performed to determine whether there was a correlation between the residuals from one observation and those from another. In this study, autocorrelation was tested using the Durbin–Watson (DW) statistic.

The results of the autocorrelation test are presented in Table 7.

Table 7. Autocorrelation Test Results (Durbin–Watson)

Statistic	Value
Sample Size (N)	37
Number of Independent Variables (K)	2
Durbin–Watson (DW)	1.700
Lower Bound (DL)	1.3635
Upper Bound (DU)	1.5838
4 – DU	2.4162
Decision Rule	DU < DW < 4 – DU
Conclusion	No autocorrelation

The results in Table 7 show that the Durbin–Watson value (1.700) is between the DU value (1.5838) and the 4–DU value (2.4162). This indicates that the regression model does not experience autocorrelation, either positive or negative. Therefore, the assumption of residual independence has been met.

Overall, the results of the assumption testing indicate that the research data meets all the requirements for inferential statistical analysis. Data normality was met, and no heteroscedasticity, multicollinearity, or autocorrelation issues were found. Thus, the multiple linear regression model can be used validly to test the research hypotheses in the next stage of analysis.

4.3. Correlation and Multiple Regression Analysis

Correlation analysis was conducted to test the relationship between the independent variables and the dependent variable in this study. The method used was Pearson Product–Moment Correlation, because all data had met the normality assumption as explained in Sub-chapter 4.2. This analysis aims to identify the direction, strength, and significance of the relationship between teachers' knowledge of educational objectives based on Bloom's Taxonomy and Indonesian character education with the understanding of the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti as the conceptual basis of the Culture School of Ponoragan.

The first correlation test was conducted to determine the relationship between teachers' knowledge of educational objectives based on Bloom's Taxonomy (X1) and the understanding of Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti (Y). The results of the correlation analysis are presented in Table 8.

Table 8. Pearson Correlation between Bloom's Taxonomy Knowledge (X1) and Javanese Philosophical Understanding (Y)

Variables	Pearson Correlation (r)	Significance (α)	Criterion	Interpretation
X1 – Y	Positive	0.000	α < 0.05	Significant positive correlation

Based on Table 8, the significance value of the correlation between variables X1 and Y is 0.000, which is smaller than the significance limit of 0.05. This indicates a positive and significant relationship between teachers' knowledge of educational objectives based on Bloom's Taxonomy and their understanding of Javanese philosophy as the conceptual foundation of the Culture School of Ponoragan. Thus, the higher the level of teachers' understanding of educational objectives based on Bloom's Taxonomy, the stronger their understanding of Javanese philosophical values internalized in cultural education.

The next correlation analysis aims to test the relationship between teachers' knowledge of Indonesian character education (X2) and their understanding of the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti (Y). The results of this correlation test are presented in Table 9.

Table 9. Pearson Correlation between Character Education Knowledge (X2) and Javanese Philosophical Understanding (Y)

Variables	Pearson Correlation (r)	Significance (α)	Criterion	Interpretation
X2 – Y	Positive	0.000	α < 0.05	Significant positive correlation

Based on Table 9, the significance value of the correlation between variables X2 and Y is 0.000, which is below the significance threshold of 0.05. This result indicates that teachers' knowledge of Indonesian character education has a positive and significant relationship with the understanding of the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti. This finding indicates that the internalization of character education values contributes directly to teachers' understanding of local cultural philosophy as the basis for developing culture-based education.

Multiple linear regression analysis was conducted to test the simultaneous and partial influence of teachers' knowledge of educational objectives based on Bloom's Taxonomy (X1) and teachers' knowledge of Indonesian character education (X2) on the understanding of Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti (Y). This analysis was conducted after all regression assumptions were declared fulfilled.

A summary of the regression model is used to determine the strength of the relationship between the independent and dependent variables and the extent of the independent variable's contribution in explaining the dependent variable. The results of the summary of the regression model are presented in Table 10.

Table 10. Model Summary of Multiple Linear Regression

Model	R	R Square	Adjusted R Square
X1, X2 → Y	0.963	0.928	0.923

Based on Table 10, the multiple correlation coefficient (R) value of 0.963 indicates a very strong relationship between the independent variables (X1 and X2) and the dependent variable (Y). The R Square value of 0.928 indicates that 92.8% of the variation in teachers' understanding of Javanese philosophy can be explained by a combination of teachers' knowledge of Bloom's Taxonomy and Indonesian character education. Meanwhile, 7.2% of the variation is influenced by other factors outside the research model.

The present study demonstrates that teachers' knowledge of Bloom's Taxonomy and Indonesian character education significantly predicts their capacity to understand and pedagogically internalize the Javanese philosophy of Sura Dira Jayaningrat Lebur Dening Pangastuti. From an educational technology perspective, this finding highlights that teacher conceptual knowledge constitutes a critical foundation for technology-mediated and culturally responsive pedagogy, rather than representing merely a cultural or moral education outcome.

Bloom's Taxonomy, particularly in its revised form, has been extensively adopted in instructional design for digital and technology-supported learning environments due to its capacity to align learning objectives, instructional activities, and assessment strategies [82]. Prior studies in educational technology emphasize that teachers' mastery of Bloom's hierarchical cognitive processes enables the design of technology-enhanced learning tasks that promote higher-order thinking, such as analysis, evaluation, and creation, rather than surface-level engagement [83], [84]. In this regard, the present findings suggest that teachers with stronger conceptual understanding of Bloom's Taxonomy are better positioned to conceptually frame cultural and philosophical values within structured learning designs that may later be mediated through digital technologies.

Similarly, the significant contribution of teachers' character education knowledge underscores the importance of value-oriented pedagogical competence in technology-supported learning contexts. Educational technology literature increasingly recognizes that digital platforms are not value-neutral; their pedagogical

effectiveness depends on teachers' ability to integrate ethical, cultural, and character-based objectives into learning design [85]. Studies on culturally responsive teaching in technology-supported environments indicate that when teachers intentionally embed cultural values into instructional design, learners demonstrate higher engagement and deeper conceptual understanding [86]. The present study aligns with this perspective by showing that character education knowledge strengthens teachers' philosophical understanding, which is a prerequisite for meaningful and ethical technology integration.

The combined influence of Bloom's Taxonomy and character education on teachers' philosophical understanding points to a tripartite competency structure comprising pedagogical design knowledge, cultural-character orientation, and readiness for technology integration. This configuration resonates strongly with the Technological Pedagogical Content Knowledge (TPACK) framework, which posits that effective educational technology use emerges from the interaction between pedagogy, content, and technology rather than from technical skills alone [87]. Although technology use was not directly measured in this study, the findings reinforce existing research emphasizing that teacher cognition and pedagogical orientation critically shape how technology is later interpreted, selected, and implemented in instructional contexts [88]. Overall, this study extends educational technology discourse by evidencing that conceptual and value-based teacher knowledge forms the epistemic foundation of technology-mediated cultural learning. The results reaffirm that the success of educational technology initiatives depends not merely on access to digital tools but on teachers' ability to align technology with pedagogical structures and culturally grounded learning objectives.

This study contributes novel insight to educational technology research by empirically demonstrating that teachers' pedagogical knowledge (Bloom's Taxonomy) and character education competence jointly predict their readiness to internalize and pedagogically operationalize local cultural philosophy within technology-mediated learning contexts. While prior educational technology studies have predominantly focused on technology adoption, usability, or digital competence, this research foregrounds teacher conceptual cognition as a foundational enabler of culturally responsive technology integration. By integrating instructional design theory, character education, and local wisdom into a single explanatory model, this study advances an integrative framework that positions educational technology as a pedagogical and cultural practice rather than a purely technical intervention.

The findings of this study carry important implications for educational technology theory, practice, and policy. Theoretically, the results reinforce the view that effective technology integration in education is fundamentally rooted in teachers' conceptual and pedagogical knowledge rather than in technical proficiency alone. The significant roles of Bloom's Taxonomy and character education suggest that instructional design frameworks and value-oriented pedagogies form the epistemic foundation upon which technology-mediated learning can be meaningfully constructed. From a practical perspective, the study implies that teacher professional development programs should prioritize the integration of pedagogical design knowledge, character education, and technology readiness. Training initiatives should equip teachers with the ability to align digital tools with higher-order cognitive objectives and culturally grounded values, enabling technology to function as a medium for deep, reflective, and ethically informed learning. At the policy level, the findings suggest that educational technology initiatives should extend beyond infrastructure provision and emphasize teachers' pedagogical and conceptual preparedness, particularly in culturally diverse educational contexts where technology-mediated instruction must remain aligned with local wisdom and character formation goals.

This study has several limitations. First, it did not directly examine teachers' actual classroom use of educational technology, focusing instead on conceptual and pedagogical readiness for technology integration. Second, the cultural specificity of *Sura Dira Jayaningrat Lebur Dening Pangastuti* and the localized research context may limit the generalizability of the findings. Finally, the cross-sectional design restricts causal interpretation; therefore, future studies employing longitudinal or intervention-based approaches are recommended.

5. CONCLUSION

This study concludes that teachers' pedagogical and character-related knowledge constitutes a critical foundation for culturally grounded and technology-mediated educational practice. The findings show that teachers' knowledge of educational objectives based on Bloom's Taxonomy is positively and significantly associated with their understanding of the Javanese philosophy *Sura Dira Jayaningrat Lebur Dening Pangastuti* as the conceptual basis of the Culture School of Ponoragan. Similarly, teachers' knowledge of Indonesian character education demonstrates a positive and significant relationship with their philosophical understanding. When examined simultaneously, both forms of knowledge exert a strong and significant influence on teachers' comprehension of this local philosophy. From an educational technology perspective, these results suggest that teachers' conceptual mastery of instructional design principles and character education provides essential pedagogical readiness for the effective integration of digital and technology-supported learning environments. Therefore, the integration of Bloom's Taxonomy, character education, and Javanese philosophy offers a coherent framework for strengthening

the identity of Ponorogo's cultural education while supporting the development of culturally responsive and pedagogically sound educational technology practices through the Culture School of Ponoragan. Future research is recommended to examine how this conceptual readiness is translated into actual classroom technology practices, including the use of digital platforms, multimedia resources, or immersive technologies, as well as to employ longitudinal or experimental designs to better capture causal relationships and learning impacts across diverse cultural contexts.

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The authors declare that no artificial intelligence (AI) tools were used in the preparation, analysis, or writing of this manuscript. All aspects of the research, including data collection, interpretation, and manuscript preparation, were carried **out** entirely by the authors without the assistance of AI-based technologies.

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