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Teachers' Pedagogical Skill Profile in the Digital Learning Era: A Reflective Study in an Integrated Islamic Education Foundation

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ABSTRACT

The transformation of education in the digital era demands that teachers possess adaptive, innovative, and responsive pedagogical skills aligned with 21st-century learning needs. This study aims to analyse the profile of teachers' pedagogical skills in the context of digital learning and to identify areas requiring further development. Employing a descriptive survey approach, the research involved 42 teachers from various educational levels (early childhood, primary, and lower secondary) at the Banjar Uswatun Hasanah Foundation. Data were collected using a 60-item reflective survey instrument on pedagogical skills, rated on a 4-point Likert scale. The results indicate that teachers demonstrate strong communication and interpersonal relationship skills (M = 3.64–3.76) yet face challenges in integrating technology into instruction (M = 2.07–2.33) and implementing project-based learning (M = 2.81–2.83). Overall, the average level of pedagogical skill was categorized as good (M = 3.13; SD = 0.76). These findings highlight the urgency of teacher professional development programs that focus on digital literacy and instructional innovation to enhance teacher readiness in responding to the dynamics of digital learning within integrated Islamic education settings.

Keywords: pedagogical skills, digital learning, teacher development, digital literacy, Islamic education

INTRODUCTION

The advancement of digital technology has fundamentally transformed educational paradigms. Teachers are no longer positioned merely as conveyors of information, but rather as innovative and collaborative facilitators within digital learning environments. In the 21st-century context, pedagogical competencies extend beyond subject mastery to include proficiency in educational technologies, the use of digital media, the implementation of project-based learning, and the ability to manage online classrooms effectively [1], [2], [3], [4]. The Banjar Uswatun Hasanah Foundation (YBUH), as an integrated Islamic education institution overseeing levels from early childhood (PAUD) to lower secondary (SMP), has also been affected by these shifts. The diversity of educational levels under its management necessitates differentiated pedagogical development that aligns with the specific contexts and learner characteristics at each level [5], [6].

To date, no systematic and comprehensive study has mapped the pedagogical skill profiles of teachers at YBUH, particularly within the context of digital learning. While several previous studies have explored aspects of teachers' pedagogical competencies in the digital era, they often lack specificity regarding institutional context. Anggraini, Ahmad, and Hanafi [7] found that digital literacy and teaching experience contribute significantly to pedagogical competence, but their study employed a general quantitative design and did not focus on integrated Islamic school settings. Similarly, Zhang and Policarpio [8] highlighted digital skill gaps in vocational education, and Kiryakova and Kozhuharova [9] emphasized the role of digital competence in successful pedagogical practice, yet neither addressed the variations in pedagogical needs across different school levels within a single institution—particularly one rooted in Islamic education, such as YBUH. Consequently, teacher development programs may run the risk of being misaligned with the contextual needs of specific school levels.

This study seeks to fill that gap by offering a reflective and quantitative overview of the pedagogical skill profiles of YBUH teachers in the digital era. Through a reflective survey approach involving teachers across multiple educational levels, the study aims to identify well-developed pedagogical dimensions as well as areas requiring further enhancement. The study is distinct in its focus on a single integrated Islamic institution encompassing a full educational span from early childhood to lower secondary, and in its analysis of skill variation by level. The findings are expected to serve as evidence-based input for designing teacher

development programs that are both adaptive to digital learning demands and responsive to the contextual character of integrated Islamic education.

Several prior studies provide foundational insights into the nature of pedagogical competence in the digital age. Malik [10] , in his article *Changing Profile of Teachers in the Digital Age*, argues that digital transformation has significantly altered the roles and competencies required of teachers. He asserts that conventional pedagogical skills are no longer sufficient; instead, teachers must be capable of creatively and responsively integrating technology into instruction. Malik also underscores the importance of reflective and collaborative capacities in navigating the rapid changes brought about by educational technology—concepts central to the present study.

Zoneva's research [11] further supports this urgency by focusing on digital pedagogical competences, particularly for teachers of technology and entrepreneurship. Her framework includes capabilities such as managing online learning environments, mentoring students virtually, and fostering digital ethics in classroom contexts. While her study focuses on subject-specific educators, its core principles—digital literacy, curriculum adaptation, and pedagogical innovation—are highly relevant for teachers in integrated Islamic schools who face similar instructional challenges.

In the Indonesian context, Anggraini, Ahmad, and Hanafi [12] found that digital literacy and teaching experience are strong predictors of teachers' pedagogical competence in the digital era. Their study emphasizes that such skills are shaped not only by formal training but also through meaningful exposure to technology and teachers' capacity to integrate it into classroom instruction. The relevance of their work lies in its acknowledgment of experience-based approaches and data-informed measurement of teacher competencies—an approach mirrored in this study using reflective survey data in an integrated Islamic school setting.

RESEARCH METHODS

1. Research Design

   This study employed a quantitative approach using a descriptive survey method aimed at providing a comprehensive overview of teachers' pedagogical skill profiles within the context of digital-era learning [13], [14]. The research design was cross-sectional in nature[15], [16], meaning that data were collected at a single point in time to capture teachers' current perceptions of their pedagogical competencies [17], [18].

2. Research Participants

   The participants in this study were teachers from various educational levels under the management of the Banjar Uswatun Hasanah Foundation (YBUH), including early childhood (PAUD/TK), primary (SD), and lower secondary (SMP) levels. A purposive sampling technique was applied, with the following inclusion criteria: actively teaching at the time of data collection; having at least one year of teaching experience; and voluntarily agreeing to participate in the study.

   A total of 42 teachers participated, with 73.8% female and 26.2% male. Based on educational levels, 52.4% taught at the primary level, 26.2% at the early childhood level, and 21.4% at the lower secondary level. This composition proportionally reflects the distribution of teachers across YBUH institutions.

3. Research Instrument

   The instrument used was a reflective survey on pedagogical skills, developed based on a 21st-century pedagogical skills framework. This framework was constructed with reference to pedagogical theories proposed by Anderson et al. [19], Shulman [20], and Koehler & Mishra [21], [22], [23]. The instrument consisted of 60 statement items covering seven main dimensions, as summarized in Table 1.

Table 1. Pedagogical Skills Dimensions in the Research Instrument

Pedagogical Skills Dimensions	Brief Description
Student-Centered Learning	Designing instruction based on students' needs and potential.
Differentiated Instruction	Adapting strategies and materials to suit student characteristics.
Development of Critical and Creative Thinking	Encouraging students to think analytically and generate original ideas.
Technology Integration	Effectively utilizing digital technology in learning.
Assessment and Evaluation	Designing and applying appropriate learning assessments.
Collaboration and Communication	Building effective collaboration and communication with students and colleagues.
Reflection and Self-Development	Engaging in teaching reflection and ongoing professional development.

Each item in the instrument used a 4-point Likert scale. This scale was selected to encourage response directionality and minimize central tendency bias [24]. Content validity was assessed through expert judgment by three education specialists. In addition, reliability testing using Cronbach's Alpha yielded a score of 0.969 [25], [26], indicating a very high level of reliability based on psychometric standards.

4. Data Collection Procedure

   Data were collected online via Google Forms in March 2025. Prior to completing the survey,

participants received clear information regarding the purpose of the study, confidentiality assurances, and their right to withdraw at any time.

5. Analisis Data

Data were analyzed using descriptive statistical techniques with the assistance of SPSS version [27], [28], [29]. The analysis was carried out through the following steps, as summarized in Table 2:

Table 2. Data Analysis Procedures in the Study

Data Analysis Steps
Calculating the mean and standard deviation for each item and dimension
Identifying items with the highest and lowest scores
Analyzing score variability to identify areas requiring improvement
Comparing pedagogical skills across educational levels using Analysis of Variance (ANOVA)

Interpretation of the analysis results was based on score categories as presented in Table 3.

Table 3. Score Interpretation Categories for Pedagogical Skills

Score Range	Category
1,00 – 1,75	Low
1,76 – 2,50	Fair
2,51 – 3,25	Good
3,26 – 4,00	Excellent

The level of statistical significance in the analysis was set at $\alpha = 0.05$.

RESULTS AND DISCUSSION

1. Teachers' Pedagogical Skill Profile at YBUH

The analysis revealed that, overall, teachers at YBUH demonstrated a good level of pedagogical skill, with a mean score of 3.13 (SD = 0.76). The 60 analyzed items ranged in score from 2.07 to 3.76, indicating a considerable variation across the different aspects of pedagogical practice. Among all responses, 47.4% selected "Often" (scale 3) and 33.7% selected "Always" (scale 4), while only 16.7% selected "Rarely" (scale 2) and 2.1% selected "Never" (scale 1). This pattern suggests a generally positive perception of their own pedagogical competencies.

In aggregate, the findings confirm that teachers' pedagogical skills at YBUH are categorized as good, as reflected by the average score of 3.13 ± 0.76. The score range of 2.07–3.76 reflects variability in mastery levels across the 60 surveyed items—ranging from lesson planning and implementation to assessment and reflective professional development. The dominance of "Often" (47.4%) and "Always" (33.7%) responses demonstrates that most teachers regularly apply expected pedagogical practices. However, the proportion of "Rarely" (16.7%) and "Never" (2.1%) responses highlight specific areas in need of improvement. The moderate standard deviation indicates individual differences across teachers, presenting an opportunity for need-based mentoring and support. Overall, these results illustrate a positive perception of pedagogical competence at YBUH, while simultaneously emphasizing the importance of targeted improvement in lower-scoring indicators to achieve equitable instructional quality across the institution.

2. Highest-Scoring Pedagogical Skill Dimension

Teachers showed their strongest performance in the area of communication and interpersonal relationships. The highest scores were recorded on the following items:

a. "Using clear, simple, and understandable language" (M = 3.76, SD = 0.43)
b. "Building positive relationships with students" (M = 3.64, SD = 0.53)
c. "Understanding and responding to students' emotional needs" (M = 3.62, SD = 0.58)

Other indicators within this dimension also received high ratings (M ≈ 3.60), reflecting strong teacher competence in core aspects of classroom management and teacher-student relationships.

This dimension emerged as the highest-rated area in the study, indicating that YBUH teachers possess excellent skills in establishing effective and meaningful classroom interactions. The three highest-scoring indicators reinforce this finding: clarity and simplicity in language use (M = 3.76; SD = 0.43), the ability to build positive relationships with students (M = 3.64; SD = 0.53), and sensitivity to students' emotional needs (M = 3.62; SD = 0.58). The consistently high average (M ≈ 3.60) across other indicators within this dimension further underscores that teachers' primary strengths lie in humanistic pedagogical communication.

Such competence is essential for creating a positive learning environment, promoting student engagement, and fostering strong emotional connections between teachers and learners. In other words, the strength demonstrated in this dimension significantly contributes to the overall effectiveness of the teaching and learning process.

3. Lowest-Scoring Pedagogical Dimension

The integration of technology emerged as the most significant challenge. The lowest-scoring items included:

a. "Utilizing technology for formative assessment" (M = 2.07, SD = 0.83)
b. "Providing students with opportunities to use technology" (M = 2.21, SD = 0.86

c. "Using technology to enrich learning experiences" (M = 2.33, SD = 0.75)

These results suggest that teachers at YBUH continue to face considerable difficulties in effectively incorporating technology into their pedagogical practices. The low scores reflect that technology remains underutilized in daily classroom routines, both in terms of instructional delivery and student engagement.

Another area that demonstrated relatively low scores was innovative instruction, particularly project-based learning (PBL), with mean scores ranging from 2.81 to 2.83. This pattern indicates that teaching practices are still largely dominated by traditional, teacher-centered approaches, rather than learner-centered strategies that promote exploration, collaboration, and student-driven problem-solving. The findings underscore an urgent need to strengthen teachers' capacity in digital pedagogy and 21st-century instructional design so they may better align with the demands of dynamic, technology-driven educational environments.

4. Variability in Pedagogical Skills

A total of 24 items exhibited a standard deviation greater than 0.70, indicating significant differences in pedagogical competence among individual teachers. The items with the highest variability were:

a. "Participation in professional learning communities" (M = 2.86, SD = 0.89)
b. "Teaching the ethical use of technology" (M = 2.69, SD = 0.89)

These findings suggest a noticeable disparity in pedagogical proficiency across the teaching staff. While the overall pedagogical skill level was categorized as good, the high variability highlights that some teachers have not yet achieved consistent competence across specific domains. The two most variable items suggest that not all educators are actively engaged in ongoing professional learning nor equally attentive to fostering responsible digital literacy.

Such differences may be attributed to multiple factors, including variations in educational background, teaching experience, access to relevant training, or personal motivation. Consequently, these results emphasize the need for more personalized and targeted professional development initiatives. Tailoring training programs to address individual teachers' specific needs could help bridge existing skill gaps and support more equitable pedagogical growth throughout the institution.

5. Comparison Across Educational Levels

Although no statistically significant differences were found ($p > 0.05$), some noteworthy patterns emerged from the data:

a. Primary school (SD) teachers scored highest in communication and classroom management skills (M = 3.18).
b. Lower secondary (SMP) teachers demonstrated slightly higher levels of technology integration (M = 2.45) compared to early childhood (PAUD) teachers (M = 2.12) and primary school teachers (M = 2.31).

Table 4. Respondent Demographics

Educational Level	Frequency (n)	Percentage (%)
Early Childhood (PAUD/TK)	11	26.2
Primary School (SD)	22	52.4
Lower Secondary (SMP)	9	21.4
Total	**42**	**100.0**

Based on Table 4, the comparison across educational levels reveals that although no statistically significant differences were found ($p > 0.05$), certain patterns emerged that may serve as valuable input for teacher professional development. Primary school (SD) teachers demonstrated relatively higher competence in communication and classroom management skills, with the highest average score (M = 3.18), suggesting that they are more consistent in creating a conducive learning environment and fostering effective relationships with students.

In contrast, lower secondary (SMP) teachers showed slightly higher performance in technology integration (M = 2.45) compared to their counterparts in primary school (M = 2.31) and early childhood education (PAUD) (M = 2.12). This pattern is likely influenced by the nature of SMP learners, who are generally more familiar with digital tools and face a more complex curriculum, which may encourage teachers at this level to begin exploring the use of technology in instruction, albeit not yet at an optimal level. The respondent composition 11 PAUD teachers (26.2%), 22 SD teachers (52.4%), and 9 SMP teachers (21.4%) also provides contextual insight into these tendencies. Overall, while no significant differences were detected statistically, these variations are important to consider in the design of tiered training programs that address the unique needs of each educational level to promote equitable pedagogical competence across all school units.

Table 5. Descriptive Statistics of Pedagogical Skills by Educational Level

Level	N	Mean	SD	Min	Max	Category
Early Childhood (PAUD/TK)	11	3.23	0.71	1	4	Good
Primary School (SD)	22	3.08	0.77	1	4	Good
Lower Secondary (SMP)	9	3.12	0.77	1	4	Good
Total	42	3.13	0.76	1	4	Good

Based on Table 5, the descriptive statistics indicate that teachers' pedagogical skills across all educational levels—PAUD (early childhood), SD (primary), and SMP (lower secondary)—fell within the "Good" category, with mean scores ranging from 3.08 to 3.23. PAUD teachers reported the highest average score (M = 3.23; SD = 0.71), followed by SMP teachers (M = 3.12; SD = 0.77), and SD teachers (M = 3.08; SD = 0.77). Although there are minor differences between levels, the overall consistency in mean scores reflects a generally positive perception of pedagogical competence across the board.

The identical minimum and maximum score range (1 to 4) across all levels suggests variability in individual teachers' perceptions, but not to the extent that it affects the overall classification, which remains at the "Good" level. These findings reinforce earlier results indicating that, in general, teachers at YBUH possess adequate pedagogical competencies, which are relatively evenly distributed across educational levels.

Table 6. Items with High Variability (SD > 0.70) by Educational Level

Level	Number of Items	Percentage	Main Areas with High Variability
Early Childhood (PAUD/TK)	9/60	15.0%	Educational technology, Formative assessment
Primary School (SD)	24/60	40.0%	Differentiated instruction, Diagnostic assessment
Lower Secondary (SMP)	29/60	48.3%	Professional learning communities, Student agency, Communication

Table 6 presents the number and percentage of pedagogical skill items with high variability (SD > 0.70) across different educational levels. Lower secondary (SMP) teachers had the highest number of items with elevated variability, with 29 out of 60 items (48.3%)—mainly related to participation in professional learning communities, the development of student agency, and communication skills. This suggests notable inconsistencies or disparities among SMP teachers in implementing these specific pedagogical practices.

At the primary level (SD), 24 items (40.0%) showed high variability, particularly in the areas of differentiated instruction and diagnostic (initial) assessment, indicating challenges in adapting instructional strategies to the diverse needs of students. Meanwhile, early childhood (PAUD) teachers exhibited lower variability, with only 9 items (15.0%) exceeding the threshold, mainly in the domains of educational technology and formative assessment.

Overall, these data emphasize the importance of targeted and context-sensitive pedagogical capacity building at each educational level, focusing on the most variable skill areas to promote more consistent and effective teaching quality across the institution.

Table 7. Pedagogical Skill Dimensions by Educational Level

Dimension	PAUD	SD	SMP	Overall	Category
Communication and Relationships	3.65	3.52	3.67	3.61	Excellent
Classroom Management	3.58	3.45	3.44	3.49	Excellent
Technology Integration	2.14	2.31	2.45	2.30	Fair
Differentiated Instruction	3.12	2.89	3.02	2.98	Good
Critical Thinking	2.95	2.78	2.89	2.84	Good
Assessment	3.23	3.05	3.15	3.12	Good
Self-Development	2.87	2.72	2.65	2.73	Good

Table 7 provides a detailed overview of the average pedagogical skill scores across seven core dimensions at each educational level. The highest-rated dimensions across all levels were Communication and Interpersonal Relationships and Classroom Management, both classified as "Excellent." Notably, lower secondary (SMP) teachers achieved the highest average in communication (M = 3.67), followed by PAUD (M = 3.65) and SD teachers (M = 3.52), indicating a consistent strength in building effective relationships with students. In classroom management, early childhood (PAUD) teachers scored slightly higher (M = 3.58), reflecting their sensitivity and ability to manage the dynamics of young learners in a positive and responsive manner.

Conversely, the Technology Integration dimension received the lowest scores across all levels, falling into the "Fair" category. Although SMP teachers scored slightly higher (M = 2.45) than their SD (M = 2.31) and PAUD (M = 2.14) counterparts, the overall results reveal persistent challenges in embedding digital tools into teaching practices. This aligns with earlier findings that indicated low scores on items related to the use of technology for formative assessment and student engagement. Such limitations highlight the urgent need for comprehensive and contextually relevant digital literacy training, enabling teachers to adapt tech-integrated instructional methods to the evolving needs of learners and the digital era.

Other dimensions—Differentiated Instruction, Critical Thinking, and Assessment—received average scores ranging from 2.84 to 3.12, placing them in the "Good" category. These scores suggest a reasonably strong understanding among teachers of how to accommodate learner differences, foster critical reasoning, and conduct assessments. However, the Self-Development dimension recorded the lowest average within the "Good" range (M = 2.73), reflecting limited engagement in professional growth activities such as training, professional learning communities, or reflective teaching. This underscores the need to cultivate a stronger culture of continuous learning

among teachers to foster sustained pedagogical advancement.

Overall, the pedagogical competence of teachers at the Banjar Uswatun Hasanah Foundation (YBUH) is generally considered good, with primary strengths in communication and relational skills. These findings are consistent with those of Pianta, Hamre, and Allen[30] and Wang, Degol, and Amemiya [31], who emphasized the foundational role of teacher-student relationships in promoting student engagement and academic achievement. In the context of integrated Islamic education, effective communication also plays a critical role in transmitting moral and ethical values. Hamid, Saerozi, and Huda [32] asserted that teachers serve as key agents in internalizing Islamic values through daily interactions with students.

However, the study also identified Technology Integration as a major challenge. The lowest scores were observed in items related to the use of technology for formative assessment and student-centered learning. These findings echo the work of Mailizar, Syarifuddin, and Yustina [33], who found that Indonesian teachers continue to face barriers to educational technology adoption due to skill gaps and infrastructure limitations. Similarly, Anggraini, Ahmad, and Hanafi [34] concluded that low digital literacy constrains pedagogical development in the digital age. In Islamic education settings, concerns about the alignment of digital content with Islamic values have also been cited as limiting factors [35].

Low scores in project-based learning and other innovative approaches further suggest that many teachers continue to rely on traditional instructional methods. This finding aligns with Zhang and Policarpio [36], who stressed the importance of digital pedagogical skills, including the ability to design collaborative, contextual, and student-centered learning experiences. Kiryakova and Kozhuharova [9] similarly argued that 21st-century pedagogical competence involves more than just technology use—it includes a deep understanding of strategies that foster creativity and critical thinking. The limited student agency reflected in the survey results suggests that the learning paradigm has not fully shifted from teacher-centered to student-centered approaches, as recommended by Reeve and Cheon [37].

In addition to mean scores, the high variability observed in 24 out of 60 survey items highlights a pronounced disparity in teacher competence. This issue is particularly evident at the SMP level, where nearly half of the items showed high standard deviations. Such disparities point to significant gaps in pedagogical readiness and technology integration that require differentiated intervention. These results resonate with Sweller et al.'s cognitive load theory [38], which posits that the complexity of content and adolescent learner characteristics demand higher levels of pedagogical preparation. For SMP teachers at YBUH, an imbalance between content knowledge and developmentally appropriate pedagogical knowledge represents a major challenge, as discussed by Valtonen, et.al. [39].

In terms of collaboration, the low participation rate in professional learning communities (PLCs) indicates weak peer support systems. Research by Stoll, Bolam, and colleagues [40] and Vescio, Ross, and Adams [41] has shown that PLCs enhance instructional quality through reflection and the sharing of best practices. The wide variability in this item suggests that while some teachers are active in PLCs, many others have yet to access or benefit from such collaborative practices.

Theoretically, these findings reinforce the importance of integrating pedagogical, digital, and Islamic values in teacher professional development within integrated Islamic schools. As Levin and Schrum [42], [43], [44], [45], argue, pedagogical transformation must account for local cultural and religious values to ensure that innovations are not merely superficial but truly transformative. Therefore, capacity-building programs at YBUH should adopt a responsive, collaborative, and values-based model of teacher development.

CONCLUSION

This study concludes that, overall, the pedagogical skills of teachers at the Banjar Uswatun Hasanah Foundation (YBUH) fall within the "Good" category, with notable strengths in the dimensions of communication, interpersonal relationships, and classroom management. Teachers have demonstrated the ability to build positive relationships with students, use clear and comprehensible language, and create a conducive learning environment.

However, significant challenges were identified in the dimensions of technology integration and project-based learning. The low scores and high variability across these dimensions highlight existing gaps in 21st-century competencies, particularly in digital literacy, technology-based assessment, and the design of innovative and collaborative instruction.

Moreover, the study found variations in patterns and levels of pedagogical skills across educational stages. Early childhood (PAUD) teachers tended to be consistent yet limited in their use of technology; primary school (SD) teachers struggled with differentiated instruction; and lower secondary (SMP) teachers exhibited the highest variability across nearly all dimensions, especially in professional learning communities and student agency.

Implications

1. **Differentiated and Contextualized Professional Development**
   The findings underscore the need for tiered professional development programs tailored to the specific needs and characteristics of teachers at each educational level. PAUD teachers require age-appropriate digital literacy training, SD teachers need support in differentiated instruction, and SMP teachers should focus on project-based learning and strengthening professional learning communities.

2. **Strengthening Educational Technology Competence**
   The low scores in technology integration indicate a need for systematic interventions through techno pedagogical training, including the use of ICT for formative assessment, interactive learning, and digital classroom management. Enhancing these skills is essential for preparing teachers to meet the demands of 21st-century education.
3. **Developing Professional Learning Communities (PLCs)**
   High variability suggests a pressing need to build robust professional learning communities within YBUH to reduce disparities among teachers, enhance collective reflection, and facilitate the exchange of best practices. Strategies such as coaching, mentoring, and structured reflection forums should be implemented on a regular basis.
4. **Integrating Islamic Values into Pedagogical Innovation**
   As an integrated Islamic educational institution, all teacher competency development efforts must remain grounded in Islamic values—especially regarding digital content use and modern teaching methods. Therefore, it is essential to develop guidelines and pedagogical modules that harmoniously integrate innovation with Islamic principles.
5. **Ongoing Data-Driven Evaluation**
   A system for continuous monitoring and evaluation of teacher competencies should be established, based on empirical data such as that used in this study. This will enable more objective and adaptive decision-making for human resource development in response to evolving field conditions.

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