



## **Development The Discord-Based Learning Media as a Digital Platform for Communication, Collaboration, and Student Interaction**

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### **Keywords**

Discord-based learning media; digital learning; communication; collaboration; student interaction

### **Abstract**

This study aimed to develop Discord-based learning media as a digital platform for communication, collaboration, and student interaction in the learning process. The study employed a Research and Development (R&D) method using the ADDIE model, which includes the stages of analysis, design, development, implementation, and evaluation. The developed product was organized as a structured Discord server containing channels for announcements, discussion, quizzes, assignment submission, and learning materials. The product was evaluated through expert validation and a limited trial involving students of Class XII 2 at SMAN 3 Polewali. Data were collected through questionnaires, supported by observation and interviews, and analyzed using descriptive qualitative and quantitative techniques based on a five-point Likert scale. The results showed that the developed media were considered feasible for learning use. Media expert validation yielded an average score of 4.2 (84%), categorized as good, while material expert validation yielded 4.6 (92%), categorized as very good. Student responses also indicated positive acceptance, with an average score of 4.02 (80.8%), categorized as good. The highest student rating was found in interest in the media, whereas ease of use received the lowest score. These findings imply that Discord has potential as an alternative digital learning medium that can support communication, collaboration, and student interaction, although technical guidance and accessibility support are needed to optimize its implementation in educational settings.

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## INTRODUCTION

The rapid expansion of digital learning has increased students' access to educational content, yet it has not automatically improved the quality of interaction in online learning environments. Recent research shows that student engagement in digital learning depends not only on content delivery, but also on meaningful interaction, participation, and opportunities for communication among learners (Gherghel et al., 2023; Vermeulen & Volman, 2024). Online learning becomes more effective when students perceive themselves as socially connected and actively involved in the learning process (Alshammari & Alrehaili, 2025; Vo & Ho, 2024). Therefore, the major challenge in contemporary digital education is not merely the adoption of technology, but the development of learning media that can facilitate communication, collaboration, and student interaction in pedagogically meaningful ways (van Dorresteijn et al., 2025).

A growing body of literature has emphasized the central role of social presence in shaping students' experiences in online learning. Social presence has been associated with learning satisfaction, engagement, and perceived learning quality in flexible and fully online courses (Alsayer & Lowenthal, 2025; D. P. Ong, 2026). It also helps explain how students' interactions are transformed into more meaningful learning outcomes, because students are more likely to participate actively when they feel psychologically and socially present in the virtual learning environment (Kreijns et al., 2024; Shen et al., 2024). In addition, research on high school students demonstrates that social presence can mediate the relationship between teacher support and online learning engagement, indicating that interaction quality is closely linked to emotional and instructional support in digital learning contexts (Kong et al., 2025).

In response to these needs, Discord has increasingly attracted attention as a potential platform for learning because it combines synchronous and asynchronous communication, text channels, voice interaction, file sharing, and community-based discussion in a single digital environment. A systematic review by Craig & Kay (2023) found that Discord supports communication, interaction, and social presence in higher education contexts. Further research also reported that Discord helped students connect with peers and instructors, build community, disseminate course information, and increase engagement in online classes (Lauricella et al., 2024). These findings suggest that Discord has relevant affordances for educational use, particularly for learning settings that require continuous interaction and collaborative participation.

However, several important gaps remain in the current literature. First, much of the existing research on Discord has focused on higher education and mainly explored perceptions, general use, or classroom experience rather than the systematic development of Discord-based learning media through an instructional design model (Craig & Kay, 2023; Lauricella et al., 2024). Second, many recent studies on online learning have emphasized engagement, motivation, and learning outcomes, but fewer studies have translated these constructs into a structured media product intended to support communication and collaboration in school-level contexts (Cabı, 2025; Vo & Ho, 2024; Yang & Zhu, 2025). Third, meta-review evidence shows that effective online education depends on the alignment of pedagogy, interaction, and design, which means that platform potential alone is insufficient without pedagogically grounded development (van Dorresteijn et al., 2025).

Based on these gaps, this study offers novelty in two main ways. First, this study positions Discord not merely as a communication tool, but as a learning media product that is intentionally developed to support communication, collaboration, and student interaction in a structured digital learning space. Second, this study integrates instructional design and online interaction perspectives by developing Discord-based learning media and evaluating its feasibility through expert validation and student responses. This approach is important because recent studies continue to show that well-designed online environments, social presence-based strategies, and interaction-oriented learning structures can significantly influence engagement and participation (Alshammari & Alrehaili, 2025; Xia et al., 2024).

Therefore, this study aims to develop Discord-based learning media as a digital platform for communication, collaboration, and student interaction, and to evaluate its feasibility for classroom implementation. More specifically, the study seeks to design an organized digital learning space that facilitates

discussion, material sharing, assignment submission, and interactive participation among students and teachers. This objective is in line with recent evidence that learning engagement and interaction improve when digital learning environments are structured to support communication, group participation, and social connection (Gherghel et al., 2023; Vermeulen & Volman, 2024). By addressing the gap between platform affordances and pedagogically structured implementation, this study is expected to contribute both practically to digital media development and theoretically to the growing discussion on social presence, collaborative learning, and interaction-oriented instructional design in online education.

## METHOD

This study employed a Research and Development (R&D) method aimed at designing and producing an instructional product that could be used in the learning process. This method was selected because the study did not merely investigate an educational phenomenon, but also focused on the systematic development and feasibility testing of a learning medium. In educational research, research design functions as a structured plan for collecting, analyzing, and interpreting data in accordance with the objectives of the study (Creswell & Plano Clark, 2018). The product developed in this research was Discord-based learning media, designed as a digital platform to support communication, collaboration, and student interaction in learning activities. The development process adopted the ADDIE model, which consists of five stages: analysis, design, development, implementation, and evaluation. The ADDIE model was chosen because it provides a structured and systematic framework for developing effective and efficient instructional media. In this study, however, the development process was limited to a small-scale implementation stage, meaning that the product was tested only through a limited trial to examine its initial feasibility and user responses.

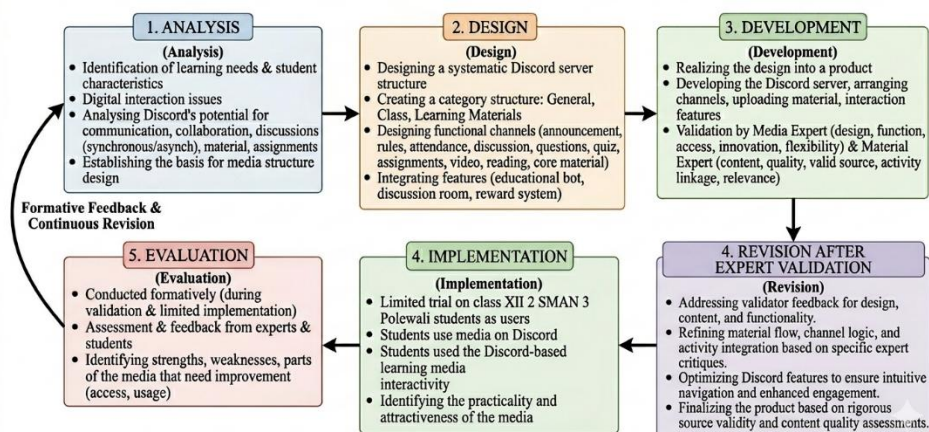


Figure 1. ADDIE Flow for Developing Discord-Based Learning Media

The participants in this study consisted of two groups, namely expert validators and students. The expert validators included media experts and material experts with expertise in educational media and instructional content. The student participants involved in the limited trial were students of Class XII 2 at SMAN 3 Polewali. The data were collected through questionnaires, supported by observation and interviews as described in the article. The questionnaires were administered to both expert validators and students to obtain data regarding the quality and feasibility of the developed learning media. The instrument items were arranged according to the evaluation indicators for each respondent group so that the resulting data could comprehensively reflect the quality of the product in terms of media design, material appropriateness, and user experience.

Data analysis in this study involved both qualitative and quantitative techniques. Qualitative data were obtained from suggestions, comments, and feedback provided by the media and material experts during the validation process. These data were analyzed descriptively and used as the basis for revising and refining the

developed product. Quantitative data were obtained from the questionnaire scores completed by the validators and students. The questionnaires used a five-point Likert scale, where 1 indicated *strongly disagree*, 2 *disagree*, 3 *neutral*, 4 *agree*, and 5 *strongly agree*. The scores were then calculated into mean values and percentages to determine the feasibility category of the developed media. The quantitative results were used to indicate the level of feasibility of the Discord-based learning media based on assessments from media experts, material experts, and student responses. By combining qualitative and quantitative analyses, this study provided a more comprehensive evaluation of the product in terms of its design quality, content suitability, and user acceptance.

## RESULTS AND DISCUSSION

### Results

#### The Developed Discord-Based Learning Media

This study resulted in the development of Discord-based learning media designed to support communication, collaboration, and student interaction in the learning process. The developed product was organized as a structured Discord server consisting of several categories and channels adapted to instructional needs. The media was designed not only to provide access to learning materials, but also to facilitate interaction between teachers and students as well as among students themselves.

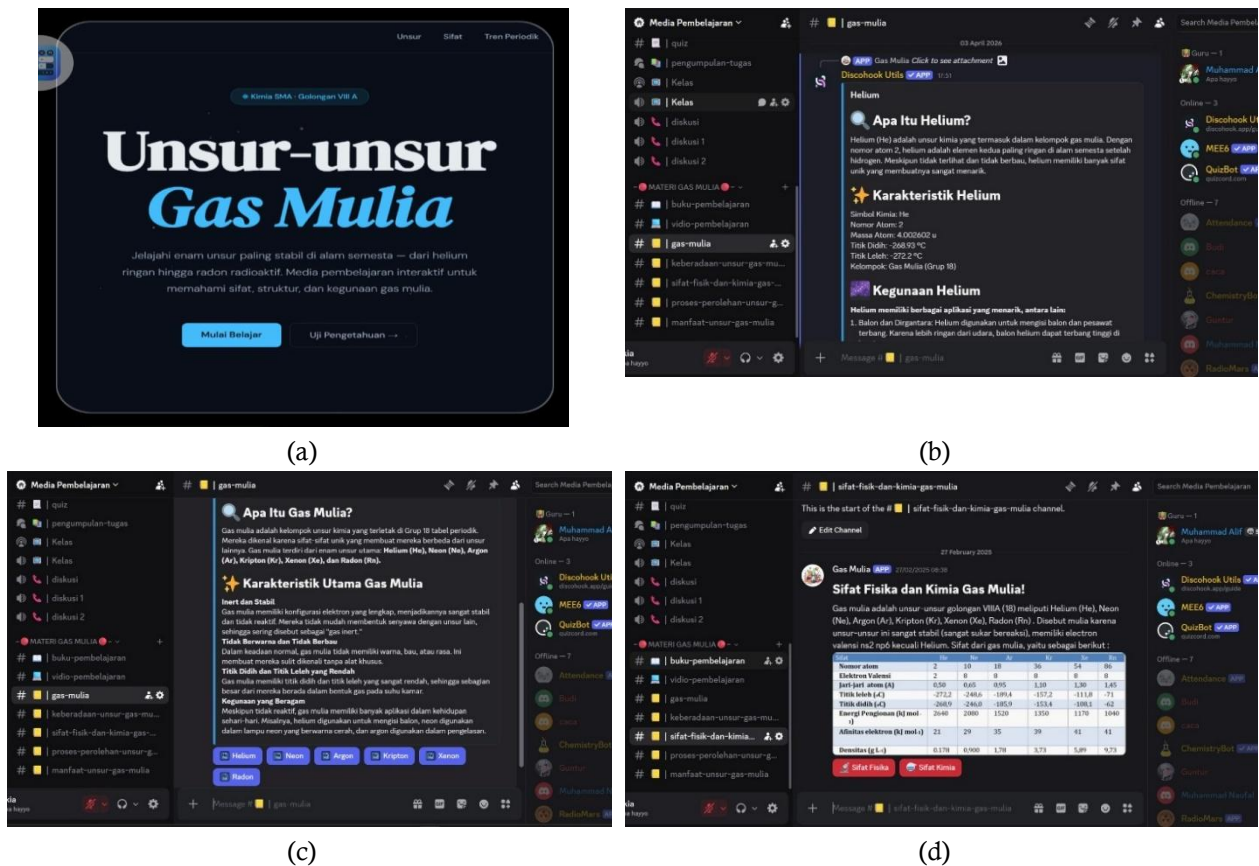


Figure 2. Developed Discord-Based Learning Media Interface

The developed Discord server consisted of three main categories, namely General, Class, and Learning Materials. These categories contained various channels with specific functions, such as announcements, rules, attendance, discussion, quizzes, assignment submission, video-based learning, and learning resources. As shown in Figure 2, the structure of the server was designed to provide an organized digital learning environment that

supports both academic activities and interactive participation. After presenting the developed product, the next result describes the feasibility of the media based on expert validation.

### Media Expert Validation Results

To examine the feasibility of the developed product from the perspective of media quality, validation was conducted by media experts. As presented in Table 1, this validation focused on several aspects, including media design, feature functionality, ease of access, innovation in media use, and flexibility of use.

Table 1. Media Expert Validation Results of the Developed Discord-Based Learning Media

| No. | Indicator                | Expert 1   | Expert 2   | Mean Score | Percentage (%) | Category    |
|-----|--------------------------|------------|------------|------------|----------------|-------------|
| 1   | Media Design Feasibility | 5          | 4          | 4.5        | 90             | Very Good   |
| 2   | Feature Functionality    | 4          | 5          | 4.5        | 90             | Very Good   |
| 3   | Ease of Access           | 3          | 3          | 3.0        | 60             | Fair        |
| 4   | Innovation in Media Use  | 5          | 4          | 4.5        | 90             | Very Good   |
| 5   | Flexibility of Use       | 4          | 5          | 4.5        | 90             | Very Good   |
|     | <b>Average</b>           | <b>4.2</b> | <b>4.2</b> | <b>4.2</b> | <b>84</b>      | <b>Good</b> |

Based on Table 1, the developed Discord-based learning media obtained an average score of 4.2 with a percentage of 84%, which was categorized as Good. The highest scores were found in media design feasibility, feature functionality, innovation in media use, and flexibility of use, each receiving 4.5 or 90%. In contrast, ease of access received the lowest score, namely 3.0 or 60%, which was categorized as Fair. These results indicate that the media were considered feasible in terms of design and functionality, although accessibility remained the weakest aspect. Following the media expert assessment, the feasibility of the instructional content embedded in the developed media was evaluated by material experts.

### Material Expert Validation Results

In addition to media-related aspects, the developed product was also validated in terms of instructional content. As presented in Table 2, the material expert validation assessed whether the learning materials delivered through Discord were appropriate, relevant, and aligned with students' needs.

Table 2. Material Expert Validation Results of the Developed Discord-Based Learning Media

| No. | Indicator                                           | Expert 1 | Expert 2 | Mean Score | Percentage (%) | Category  |
|-----|-----------------------------------------------------|----------|----------|------------|----------------|-----------|
| 1   | Content Suitability                                 | 5        | 4        | 4.5        | 90             | Very Good |
| 2   | Quality of Learning Materials                       | 4        | 5        | 4.5        | 90             | Very Good |
| 3   | Use of Valid Sources                                | 5        | 4        | 4.5        | 90             | Very Good |
| 4   | Alignment between Materials and Learning Activities | 4        | 5        | 4.5        | 90             | Very Good |
| 5   | Relevance to Students' Needs                        | 5        | 5        | 5.0        | 100            | Very Good |

| No. | Indicator      | Expert<br>1 | Expert<br>2 | Mean<br>Score | Percentage<br>(%) | Category             |
|-----|----------------|-------------|-------------|---------------|-------------------|----------------------|
|     | <b>Average</b> | <b>4.6</b>  | <b>4.6</b>  | <b>4.6</b>    | <b>92</b>         | <b>Very<br/>Good</b> |

As presented in Table 2, the developed media obtained an average score of 4.6 with a percentage of 92%, which fell into the Very Good category. The highest score was found in relevance to students' needs, which reached 5.0 or 100%. Other aspects, including content suitability, quality of instructional materials, use of valid sources, and alignment between materials and learning activities, each obtained 4.5 or 90%. These findings show that the instructional content integrated into the Discord-based media was considered highly appropriate and relevant for learning purposes. After the expert validations were completed, the developed media were implemented on a limited scale to obtain responses from students as the end users.

### Student Response Results

A limited trial was conducted to identify students' responses to the developed Discord-based learning media. This stage was intended to provide an initial picture of how the media were received and perceived by students in terms of usability, attractiveness, learning comfort, understanding of materials, and interactivity.

Table 3. Student Responses to the Developed Discord-Based Learning Media

| No. | Assessment Aspect                  | Mean Score  | Percentage (%) | Category    |
|-----|------------------------------------|-------------|----------------|-------------|
| 1   | Ease of Use                        | 3.2         | 64             | Fair        |
| 2   | Interest in the Media              | 4.5         | 90             | Very Good   |
| 3   | Learning Comfort                   | 4.2         | 84             | Good        |
| 4   | Ease of Understanding the Material | 4.0         | 80             | Good        |
| 5   | Interactivity                      | 4.2         | 84             | Good        |
|     | <b>Average</b>                     | <b>4.02</b> | <b>80.8</b>    | <b>Good</b> |

Based on Table 3, the students' responses to the developed media yielded an average score of 4.02 with a percentage of 80.8%, which was categorized as Good. The highest score was found in interest in the media, which reached 4.5 or 90%. Meanwhile, learning comfort and interactivity each obtained 4.2 or 84%, and ease of understanding the material received 4.0 or 80%. The lowest score was found in ease of use, with 3.2 or 64%, which was categorized as Fair. These results indicate that students responded positively to the developed media, particularly in terms of attractiveness and interactivity, although usability remained relatively lower than other aspects. Taken together, the results show that the Discord-based learning media were successfully developed and received positive evaluations from both experts and students. The implications of these findings are discussed in the following section.

### Discussion

#### Feasibility of the Developed Discord-Based Learning Media

As illustrated in Figure 2, the developed Discord-based learning media were organized into clearly differentiated categories and channels for announcements, class interaction, quizzes, assignment submission, and access to learning materials. A structured digital environment such as this is important because online learning tends to be more effective when interaction spaces, content spaces, and instructional pathways are intentionally organized and pedagogically aligned (Ahern et al., 2024; Kedia & Mishra, 2023). Rather than functioning merely as a messaging platform, the Discord server in this study was designed as a learning environment that supported

communication and guided participation. This finding is in line with studies showing that coherent and navigable online spaces can strengthen students' sense of connectedness and promote more meaningful engagement in digital learning (S. G. T. Ong & Quek, 2023).

The positive evaluation reported in Table 1 suggests that the developed media were considered feasible from the perspective of media quality, particularly in relation to design feasibility, feature functionality, innovation, and flexibility. Prior research has shown that students' engagement in online learning is strongly influenced by the quality of digital platform design and the extent to which the environment supports communication and participation (Akpen et al., 2024). Well-structured learning environments also help students understand the flow of learning activities and reduce confusion during online participation (Wu & Yu, 2024). In this regard, the high media validation score indicates that the Discord server was perceived not only as technically functional, but also as pedagogically usable as an instructional medium. This interpretation is supported by evidence that online engagement is strengthened when digital tools are designed with clear interactional affordances and flexibility of use (Aldowah et al., 2026).

The findings in Table 2 further reinforce the instructional value of the product, especially because the highest rating was obtained for relevance to students' needs. The value of a digital learning medium does not depend solely on its interface or technological novelty, it also depends on how well the content aligns with learners' academic needs and intended learning activities ((Li & Wang, 2024). Research has also emphasized that feedback mechanisms, content alignment, and meaningful task structures are central to effective online learning design (Morrison & Jacobsen, 2023). In the present study, the Discord-based learning media appear to have achieved this alignment by embedding instructional materials within channels that also supported questioning, discussion, and task submission. This integrated structure is consistent with recent findings that presence and engagement in virtual learning environments increase when learning content is meaningfully connected with participation and activity structures (Rodríguez-Ardura et al., 2025).

### **Student Responses and Usability Challenges**

Another important pattern emerges from Table 3, where students gave the highest score to interest in the media, while ease of use received the lowest score. This suggests that the developed platform was perceived as attractive and interactive, yet it still required technical adaptation from students. Such a pattern has also been reported in studies showing that digital learning environments can generate engagement and positive attitudes while still presenting usability barriers, especially when students are not fully familiar with the platform ((Benli & Kara, 2025). Students are generally more motivated to participate when the learning environment supports connectedness, dialogue, and interaction, but these benefits may be weakened if procedural clarity and digital confidence are limited (Dulfer et al., 2025). Thus, the results of this study indicate that appeal and usability should be understood as related but distinct dimensions of digital learning media.

The discrepancy between strong student interest and lower ease of use deserves particular attention because it highlights a common tension in digital learning innovation. A platform may be highly attractive and interaction-rich, yet students may still need support to use it effectively. Research has shown that instructor support and online competence play an important role in shaping students' affective engagement and adaptation to online learning environments (Kordrostami & Seitz, 2022). Similarly, instructor social presence has been found to influence how comfortable and engaged students feel in online classes (Shehzad & Charles, 2023). In the context of the present study, the relatively lower score for ease of use suggests that the effectiveness of Discord-based learning media may depend not only on the design of the product, but also on the availability of onboarding support, technical guidance, and initial orientation for students.

### **Pedagogical Implications of Discord-Based Learning Media**

When Table 1, Table 2, and Table 3 are considered together, the overall pattern suggests that the developed media were feasible, instructionally relevant, and positively received, although accessibility remained an issue. This pattern supports broader research showing that effective online learning emerges from the interaction among

platform design, content quality, learner support, and opportunities for active participation (Akpen et al., 2024). Collaborative online learning environments are especially valuable when they provide space for peer exchange, teacher presence, and structured engagement (Bach & Thiel, 2024). Studies on online learning effectiveness have likewise shown that students benefit more when the digital environment supports active communication and participation rather than passive content consumption alone. These insights help explain why the developed Discord-based media received positive responses from both experts and students.

From a pedagogical perspective, the present findings also indicate that Discord may function as a social learning space rather than merely as a repository for learning materials. The structured channels shown in Figure 2, together with the positive ratings for interactivity and content relevance in Table 2 and Table 3, suggest that the platform supported both communication and collaborative learning processes. Interaction-oriented environments are known to foster connectedness, dialogue, and sustained participation in online learning (Ahern et al., 2024). Teaching presence and teacher–student interaction also contribute significantly to online engagement, particularly when the platform supports continuous communication and collaborative exchange (S. G. T. Ong & Quek, 2023). In addition, online interaction has been found to influence engagement through self-efficacy and academic emotions, indicating that interactive digital environments may shape not only participation but also students' psychological involvement in learning (Wang et al., 2022). This perspective supports the interpretation that Discord in the present study functioned as a mediated social learning environment.

The implications of this study are both practical and theoretical. Practically, the findings suggest that Discord can be developed into a feasible digital learning medium when its server structure, channels, and learning activities are intentionally designed, as reflected in Figure 2 and supported by the positive results in Table 1, Table 2, and Table 3. For teachers, this means that Discord may serve as an alternative or complementary platform for communication-intensive and collaboration-oriented learning, provided that students receive adequate technical guidance during implementation. Theoretically, this study strengthens the argument that the effectiveness of online learning media depends not simply on the platform itself, but on the integration of usability, teaching presence, interaction support, and content alignment (Aldowah et al., 2026; Rodríguez-Ardura et al., 2025). Recent research has similarly emphasized that digital pedagogy should be understood as the purposeful integration of design, learner support, and interaction quality rather than as a matter of platform choice alone (Benli & Kara, 2025; Shehzad & Charles, 2023). Accordingly, this study contributes to the growing discussion on digital pedagogy by showing that platform-based learning media can support communication, collaboration, and student interaction when instructional design and learner support are treated as integral components of implementation.

## CONCLUSION

This study developed Discord-based learning media as a digital platform to support communication, collaboration, and student interaction. Using the ADDIE model, the study produced a structured Discord server with organized channels for learning activities and materials. The findings showed that the developed media were feasible for instructional use, as reflected in positive evaluations from media experts (84%), material experts (92%), and students (80.8%). The media were positively perceived in terms of design, functionality, content relevance, attractiveness, and interactivity. However, ease of use and accessibility remained the main challenges. These findings suggest that Discord has potential as an alternative digital learning medium, although its implementation should be supported by technical guidance and appropriate instructional strategies. Future studies are recommended to involve broader samples and examine its effectiveness in relation to learning outcomes and long-term student interaction.

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