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## **A NEEDS ANALYSIS FOR DEVELOPING INTERACTIVE MULTIMEDIA BASED ON LOCAL WISDOM IN TEACHING “SENJANG” IN ELEMENTARY SCHOOLS**

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**Abstract.** This research aims to analyze the need for developing interactive multimedia based on local wisdom in the teaching of *Senjang* within Cultural Arts education at the elementary school level. The novelty of this study lies in its specific focus on *Senjang* as a form of local oral literature that has received limited attention in the development of elementary school learning media, positioning it as both cultural heritage and an instructional resource. The research was motivated by students' low understanding of local cultural arts content, declining interest in *Senjang*, and the absence of adequate and engaging instructional media. A descriptive quantitative approach was employed, with data collected through questionnaires administered to 32 participants consisting of 30 students and 2 teachers. The results indicate a strong demand for interactive multimedia learning media, with students reporting increased interest, understanding, and engagement, while teachers found such media helpful in delivering the material. The needs analysis showed that students' needs reached 96.8 percent, teachers' needs 98.33 percent, and media needs 93.33 percent, all categorized as highly needed. These findings emphasize the importance of developing interactive, culturally rooted learning media to support the preservation of *Senjang* as local oral literature and to improve the quality of cultural arts education in elementary schools

Keywords: Needs Analysis; Interactive Multimedia; Local Wisdom; Cultural Arts Education

### **Introduction**

Education plays a strategic role in shaping an intelligent and character-driven generation that is prepared to face global challenges. In Indonesia, various efforts have been undertaken to improve educational quality, including curriculum reform, teacher professional development, and the provision of learning facilities (Istiqomah et al., 2023; Murtado et al., 2023; S. E. Sari et al., 2022). One significant reform is the Merdeka Curriculum, which emphasizes learning flexibility, character development, and the optimization of students' individual potential (Asiati & Hasanah, 2022; A. M. Sari et al., 2024).

Despite its progressive goals, the implementation of the Merdeka Curriculum at the elementary school level continues to face several challenges. These include unequal access to learning facilities, high administrative demands placed on teachers, and the

limited availability of contextual and engaging learning media (Darmayanti & Amalia, 2024; Argiarta et al., 2024). In cultural arts education, these challenges are reflected in students' low understanding of local wisdom and cultural values, indicating the need for more innovative and meaningful learning approaches (Arifudin, 2023; Elhefni et al., 2023; Nurcahyanti & Tirtoni, 2023).

Previous studies have highlighted the importance of integrating local culture into education and demonstrated that interactive digital media can enhance students' motivation, engagement, and conceptual understanding (AlTwijri & Alghizzi, 2024; Ekaputra et al., 2024; Puspita et al., 2023). However, learning media used in elementary schools often remain generic and detached from students' cultural contexts, resulting in learning experiences that are less meaningful and less connected to daily life (Adhiansyah et al., 2023; Naufal, 2023). In contrast, culturally contextual learning that incorporates local traditions and environmental elements has been shown to strengthen students' cultural identity and foster awareness of ancestral heritage (Lailiyah et al., 2024; Mardati & Maryani, 2024).

Although numerous studies have explored digital learning media and local culture integration, research that specifically focuses on the development of interactive multimedia based on local wisdom for particular forms of regional cultural expression remains limited. In particular, there is a lack of studies addressing *Senjang*, a traditional form of oral literature that embodies moral values, social norms, and aesthetic elements of local culture. Existing research has not adequately examined how interactive multimedia can be designed to support the learning of *Senjang* in elementary schools, nor has it sufficiently addressed students' and teachers' actual needs regarding such media. This gap indicates the necessity for a needs-based analysis that serves as a foundation for developing culturally relevant and pedagogically appropriate learning media.

*Senjang* represents an important form of local oral literature that functions not only as artistic expression but also as a medium for transmitting moral teachings, social values, and cultural identity across generations. However, its presence in formal elementary education has gradually declined, partly due to the lack of engaging instructional media and the dominance of modern digital content that is often disconnected from local traditions. Integrating *Senjang* into interactive multimedia learning can revitalize students' interest in local culture while aligning traditional values with contemporary learning practices.

Based on these considerations, this study aims to analyze the needs and design interactive multimedia based on local wisdom, with a specific focus on *Senjang* material in cultural arts education. The study seeks to support a more contextual, creative, and meaningful learning process, while bridging traditional cultural values and modern technology to enrich elementary school students' learning experiences.

Although primary education in Indonesia has undergone various reforms, including the implementation of the *Merdeka Curriculum*, in reality, many challenges still hinder the achievement of optimal learning, particularly in the subject of cultural arts. One such challenge is students' low understanding of cultural arts material that contains elements of local wisdom (*Implementasi Pendidikan Multikultural Berbasis Kurikulum Merdeka Di Kinderstation Senior High School Yogyakarta*, 2023; A. M. Sari et al., 2024; Suprapmanto & Zakiyah, 2024). This issue is largely due to the use of general, non-contextual teaching materials that fail to encourage students to think

creatively and engage actively in the learning process (Subasman & Nasyiruddin, 2024).

In addition, the limited availability of interactive and technology-based learning media also poses a barrier to creating enjoyable and meaningful learning experiences. In fact, cultural arts material based on local wisdom such as *tradition senjang* holds great potential for strengthening students' cultural identity and moral values when delivered through appropriate approaches. However, learning media that specifically accommodate this material in formats aligned with the developmental characteristics of elementary school students remain scarce. As a result, cultural arts learning tends to be less engaging and insufficiently connected to students' sociocultural contexts.

This condition indicates a fundamental problem, namely the lack of contextual and interactive learning media based on local wisdom that are designed in accordance with the characteristics and needs of elementary school students, particularly for cultural arts topics such as *tradition senjang*. This gap contributes to low student engagement and weak understanding of regional cultural values. Therefore, this study seeks to analyze learning needs and design interactive multimedia based on local wisdom as a practical solution to support more contextual, creative, and meaningful cultural arts learning.

Education plays a vital role in shaping a nation's future, especially in Indonesia, which faces significant challenges in preparing a smart and globally competitive future generation (Abo-Khalil, 2024). The Indonesian government has made various efforts to improve the quality of education through policies such as improving teaching systems, providing teacher training, and implementing curriculum reforms ((Rachman et al., 2024; Tri Wulandari & Adam Mudinillah, 2022). However, challenges related to educational equity and quality at the primary level remain significant. The currently implemented *Merdeka Curriculum* focuses on flexible learning, character development, and the nurturing of student potential through a contextual and child-centered approach (Eprilia et al., 2023).

Nevertheless, the implementation of this curriculum still faces numerous obstacles, particularly at the elementary school level (Suprapmanto & Zakiyah, 2024). Disparities in facilities and education quality between major urban centers and remote regions are major issues contributing to gaps in student learning outcomes (Faatin & Rusnilawati, 2022; LUSIANA, 2022). In addition, the high administrative burden on teachers limits their time to design creative and innovative learning experiences. Limited teaching materials and media, along with a lack of technological readiness in many elementary schools, hinder the effectiveness of learning aligned with the spirit of the new curriculum (Dewi & Setyasto, 2024; Tri Wulandari & Adam Mudinillah, 2022). In particular, for cultural arts education based on local wisdom, the availability of contextual and interactive learning media is still very limited even though such resources are essential for introducing cultural values to students (Saputro et al., 2020).

In the context of cultural arts education based on local wisdom, the availability of contextual and interactive learning media remains limited, even though such media are essential for introducing cultural values to students. Previous studies have emphasized the importance of developing learning media that align with students' characteristics and the demands of the digital era (Raharjo, safitri, et al., 2023; A. Sari et al., 2025). However, research focusing specifically on the development of interactive

multimedia grounded in local wisdom for elementary cultural arts learning is still relatively scarce.

Based on the existing literature, it can be concluded that although numerous studies have examined curriculum reform, educational policy, and the integration of technology in learning, research addressing the development of interactive learning media based on local wisdom for elementary cultural arts education remains limited. Most studies concentrate on general subjects or technology-based learning that often depends on internet access, while interactive, locally grounded, and contextually relevant media for traditional oral literature such as tradition *senjang* receive insufficient attention. This gap is particularly critical in light of the Merdeka Curriculum, which emphasizes contextual and meaningful learning experiences. The lack of technology-based learning media that integrate local wisdom reflects a mismatch between educational needs and available instructional resources. Therefore, this study aims to develop interactive multimedia based on local wisdom, specifically tradition *senjang*, to support cultural arts learning that is more engaging, contextual, and meaningful for elementary school students. Through this effort, the study seeks to enhance student engagement, improve understanding of local cultural values, and contribute to the effective implementation of the Merdeka Curriculum.

From a theoretical perspective, this study contributes to the advancement of cultural arts education and educational technology by strengthening the conceptual framework of local wisdom-based interactive multimedia within the context of elementary education. It supports the integration of traditional oral literature into modern learning media and enriches discussions on contextual learning and culturally responsive pedagogy aligned with the Merdeka Curriculum. From a practical perspective, this study provides educators with an alternative learning medium that is interactive, culturally relevant, and aligned with the developmental characteristics of elementary school students. The interactive multimedia developed in this study can serve as a reference for teachers in implementing more engaging and meaningful cultural arts learning, as well as a model for future development of local wisdom-based instructional media at the elementary level.

## **METHOD**

This study employed a descriptive quantitative approach with a specific focus on needs analysis, aimed at analyzing the need for interactive multimedia learning media based on local wisdom in the teaching of *Senjang* as part of elementary school Cultural Arts education. This needs analysis was conducted as a preliminary stage to support future development research on interactive multimedia learning media. The method was chosen to quantify perceptions and needs using standardized instruments, enabling a systematic identification of essential components required for media development.

The population in this study consisted of 30 students, consisting of 13 males and 17 females at SDN 1 Ulak Paceh, Lawang Wetan District, Musi Banyuasin Regency, who were selected as respondents to fill out the questionnaire (Dharmayani et al., 2022; Yunita, 2023). The sample size was determined based on the limited population of the target class and the exploratory nature of needs analysis research, which prioritizes depth of information over statistical generalization. This approach allows researchers to obtain detailed insights into students' and teachers' perspectives

regarding learning media that are relevant to their local context (Setiawan & Mulyati, 2020). The subjects who served as respondents in this study are detailed as follows:

**Table 1. Use Gadget**

No	Gender	Amount	Persentation
1	Student (Men)	13 people	40,62%
2	Student (Female)	17 people	53,12%
3	Teacher	2 people	6,26%
		32 people	100%

Based on Table 1, female students constituted the largest group of gadget users, followed by male students, while teachers represented the smallest proportion. This distribution indicates that most students are already familiar with gadget usage, providing a supportive foundation for the development of interactive multimedia learning media.

Data collection in this study was conducted using a questionnaire method. The instrument used was a closed-ended questionnaire employing a Likert scale designed to measure the needs of students and teachers for interactive learning media based on local wisdom in the teaching of Senjang. The questionnaire covered pedagogical, cognitive, technical, socio-cultural, aesthetic, and evaluative aspects. The instrument was distributed to 32 respondents consisting of 30 students and 2 teachers from the selected elementary school. Prior to distribution, the questionnaire instrument underwent content validation through expert judgment involving education and learning media specialists to ensure relevance, clarity, and alignment with research objectives. Instrument reliability was tested using internal consistency analysis, indicating that the questionnaire was suitable for measuring respondents' needs consistently.

The indicators used in the student needs analysis questionnaire are presented in Table 2.

**Table 2. Student needs Analysis**

No	Aspect	Indicator	Question
1	Pedagogic	Learning style	1
		Learning process	2
2	Technical	Accessibility	3
		Ability to absorb information	4
3	Cognitive	Material comprehension	5
		Preferences	6
4	Aesthetics	View display	7
		Measurement of understanding level	8, 9
5	Evaluation	Feedback	10

This approach is expected to provide a strong foundation for designing learning media that is not only visually engaging but also capable of promoting local wisdom values and enhancing student engagement in the learning process. This research process follows appropriate ethical guidelines and has received approval from the relevant authorities.

**Table 3. Teacher needs analysis**

No	Aspect	Indicator	Question
1	Pedagogic	Training	1
		Learning Methods	2
2	Technical	facilities and infrastructure	3
		affordability	4
3	Cognitive	Ability to absorb information	5
		Material comprehension	6
4	Aesthetics	Design	7
		Suitability	8
5	socio cultural	integration	9
		diversity	10
6	Evaluation	Measurement of understanding level	11
		Feedback	12

These indicators were formulated to comprehensively capture pedagogical, technical, cultural, and evaluative needs relevant to the development of interactive multimedia based on local wisdom. The data analysis process involved cleaning, organizing, and interpreting responses collected through the questionnaire. Each response was coded and scored using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scores were then converted into percentages to represent the level of perceived need among students and teachers. Descriptive statistical analysis was employed to identify patterns and trends in the data, providing an overview of priority aspects required for media development.

The interpretation of results was based on the needs assessment criteria presented in Table 5.

**Table 5. Needs Assessment Criteria**

Score	Category
81-100	Really Need
61-80	Need
41-60	Quite Necessary
21-40	No Need
1-20	Really Don't Need

This analysis serves as a foundational basis for designing interactive multimedia that is visually engaging, pedagogically appropriate, and capable of promoting local wisdom values while enhancing student engagement. The research process followed ethical research standards and received approval from the relevant institutional authorities.

## Result

Conducting a needs analysis is a crucial step in designing effective instructional materials, as it provides insights into learners' current abilities, learning preferences, and specific goals. According to Richards (2020), understanding learners' needs enables educators to make informed decisions about content, methodology, and assessment strategies that align with learners' expectations and real-world use of language or skills. Similarly, Nation and Macalister (2021) emphasize that a well-conducted needs analysis not only identifies linguistic or academic gaps but also considers motivational and contextual factors that affect learning. This approach ensures that the instructional design is learner-centered and relevant. Furthermore, modern educational frameworks, such as Universal Design for Learning (UDL),

highlight the importance of addressing diverse learner needs to enhance engagement and accessibility (Daryanes et al., 2023). Therefore, needs analysis serves as a foundational step to ensure that instructional design is learner-centered, relevant, and inclusive.

**Table 6. Student Need Analysis**

No	Name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Score	Max Score	Result
1.	AH	5	5	5	5	3	5	5	5	5	4	47	50	94
2.	AN	5	5	5	4	5	5	5	5	5	5	49	50	98
3.	BA	5	4	4	4	5	5	4	5	5	5	46	50	92
4.	AS	5	5	5	5	4	5	5	5	5	5	49	50	98
5.	EL	5	5	5	5	5	5	5	5	5	5	50	50	100
6.	ASN	5	5	5	5	5	5	5	5	5	5	50	50	100
7.	PA	5	5	5	5	5	5	5	5	5	5	50	50	100
8.	MYS	5	5	5	4	5	5	5	5	5	5	49	50	98
9.	IH	5	5	5	4	5	5	5	5	5	5	49	50	98
10.	RA	5	5	5	5	4	5	5	5	5	5	49	50	98
11.	RH	5	5	5	4	5	5	5	5	5	5	49	50	98
12.	RS	5	5	5	5	5	5	5	5	5	5	50	50	100
13.	OK	5	5	4	4	5	5	5	5	5	5	48	50	96
14.	BA	5	5	5	5	5	5	5	5	5	5	50	50	100
15.	HS	5	5	4	4	5	5	5	5	5	5	48	50	96
16.	OS	5	5	5	5	5	5	4	5	5	5	49	50	98
17.	EA	5	5	5	5	5	5	5	5	5	5	50	50	100
18.	PJ	5	5	5	5	5	5	5	5	5	5	50	50	100
19.	SF	5	5	5	4	5	5	5	5	5	5	49	50	98
20.	MN	5	5	5	5	5	5	5	5	5	5	50	50	100
21.	MPW	5	5	5	5	5	5	5	4	5	5	49	50	98
22.	NAM	5	5	5	5	5	5	5	5	5	5	50	50	100
23.	JTU	5	5	5	5	4	5	5	5	5	4	48	50	96
24.	RA	3	5	5	3	5	4	3	5	5	5	43	50	86
25.	RJ	5	5	5	5	4	5	5	5	5	5	49	50	98
26.	RAS	5	5	5	4	3	5	5	4	5	5	46	50	92
27.	AMZ	5	5	4	5	3	5	4	5	4	5	45	50	90
28.	MN	5	4	4	4	5	4	4	4	4	4	42	50	84
29.	DA	5	5	5	5	5	5	5	5	5	5	50	50	100
30.	YDS	5	5	5	5	5	5	5	5	5	5	50	50	100
Total		148	148	145	138	140	148	144	147	148	148	1454	150	96,93

Table 6. Student Needs Analysis Results shows that the majority of respondents achieved very high scores, with several students obtaining a perfect score of 100 percent. The overall average score of 96.93 percent indicates a very high level of need for interactive learning media among students. This finding demonstrates strong student demand for learning media that support understanding, engagement, and assessment in cultural arts learning.

To provide a clearer overview, the student needs analysis was further categorized into five aspects: pedagogical, technical, cognitive, aesthetic, and evaluation. The summary of these aspects is illustrated in Figure 1.

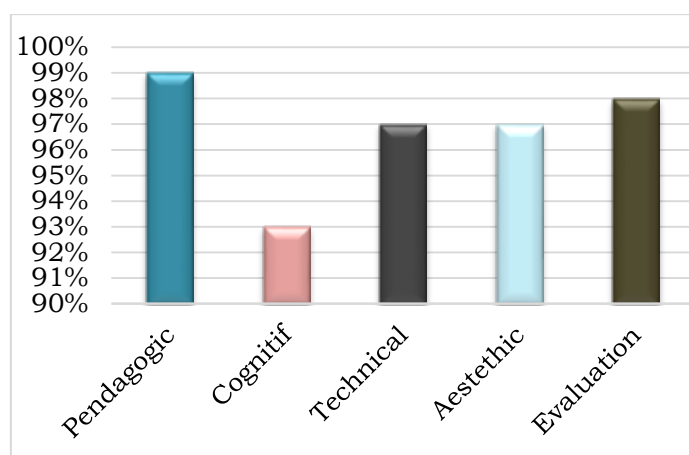


Figure 1. Recap of the Student Needs Analysis Questionnaire

Figure 1. Recap of the Student Needs Analysis Questionnaire indicates that pedagogical needs reached nearly 99 percent, showing that students strongly perceive visual and interactive media such as images, videos, animations, and quizzes as helpful for improving comprehension and learning motivation (Issa et al., 2020). From a technical perspective, approximately 97 percent of students reported having adequate access to devices and internet connectivity, suggesting minimal infrastructural barriers (Park & Kim, 2021). Cognitively, around 93 percent of students expressed difficulty understanding material delivered solely through text or verbal explanation and emphasized the need for multimedia support, consistent with multimedia learning theory (Mayer, 2020). Aesthetic aspects also scored highly at about 97 percent, indicating that attractive visual design helps maintain attention and reduce boredom (Issa et al., 2020). In the evaluation aspect, approximately 98 percent of students reported that immediate feedback from quizzes or tasks helped them understand their learning progress more clearly (Rahimi & Zhang, 2022). Overall, the average score across all aspects was 96.8 percent, reflecting a very strong need for interactive learning media integrated with local wisdom elements.

The researcher also conducted a needs analysis for teachers. Based on the analysis, two teachers provided responses to the questionnaire. The results can be seen in the diagram below

**Table 7. Teacher Need Analysis**

Name	QUESTION												score	Max Score	Result (%)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q 10	Q 11	Q 12			
AY	5	5	5	5	5	5	5	5	5	5	5	5	60	60	100
YF	5	5	5	5	5	4	5	5	4	5	5	5	58	60	96,66
	10	10	10	10	10	9	10	10	9	10	10	10	118	120	98,33

Table 7. Teacher Needs Analysis Results shows that both teachers obtained very high scores, with percentages of 100 percent and 96.66 percent. The overall average score of 98.33 percent indicates a consistently high level of need among teachers for the development of innovative learning media. The recap of teacher responses is illustrated in Figure 2.

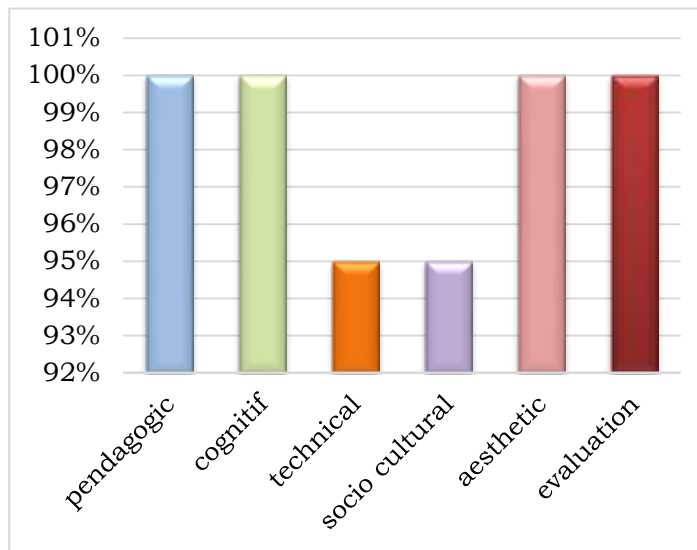


Figure 2. Teacher Needs Analysis Questionnaire Recap

Figure 2. Teacher Needs Analysis Questionnaire Recap demonstrates that teachers expressed the highest need in pedagogical and cognitive aspects, both reaching 100 percent. This finding indicates that teachers strongly require learning media that can enhance student motivation, interaction, and conceptual understanding, particularly for abstract material (Mayer, 2020; Li & Tsai, 2021). The technical aspect scored 95 percent, reflecting teachers' expectations for media that are accessible and easy to use across devices (Park & Kim, 2021). The socio-cultural aspect also reached 95 percent, emphasizing the importance of integrating local values and student cultural backgrounds into learning media (Gunawardena et al., 2021). In the aesthetic aspect, teachers again reported a very high need at 100 percent, highlighting the importance of visual appeal in sustaining student engagement (Issa et al., 2020). Finally, the evaluation aspect achieved 100 percent, indicating that teachers highly value learning media that provide immediate assessment and feedback to monitor learning progress effectively (Rahimi & Zhang, 2022).

**Table 8. Media Need Analysis**

No	Question													Acquisition score	Max Score	(%)
Students																
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12			
1	AH	4	4	4	5	5	5	5	5	5	5	4	4	55	60	91.67
2	AN	5	5	5	5	5	5	3	4	4	4	5	4	54	60	90.00
3	BA	5	5	5	5	5	5	5	4	4	4	4	5	56	60	93.33
4	AS	4	4	5	5	5	5	5	5	5	5	4	4	56	60	93.33
5	EL	5	5	5	5	5	5	5	5	5	5	5	5	60	60	100.00
6	ASN	5	5	5	5	4	5	5	5	5	5	5	5	59	60	98.33
7	PA	5	5	4	4	5	5	5	5	5	5	5	5	58	60	96.67
8	MYS	5	5	3	3	5	5	5	4	4	5	5	5	54	60	90.00
9	IH	4	4	5	5	5	4	4	4	4	5	5	3	52	60	86.67
10	RA	5	5	5	5	5	5	4	4	4	5	5	5	57	60	95.00
11	RH	5	5	5	5	5	4	4	4	4	4	4	4	53	60	88.33
12	RS	4	4	5	5	5	5	5	5	5	5	5	5	58	60	96.67
13	OK	5	5	5	4	4	4	5	5	4	4	5	4	54	60	90.00
14	BA	5	5	5	5	5	5	5	5	5	5	5	5	60	60	100.00

15	HS	4	5	5	4	4	5	4	4	5	5	5	4	54	60	90.00
16	OS	5	5	5	5	5	4	4	5	5	3	4	5	55	60	91.67
17	EA	4	4	4	4	4	4	4	5	5	5	5	5	53	60	88.33
18	PJ	4	4	4	4	4	4	4	4	5	5	4	4	50	60	83.33
19	SF	5	5	5	5	5	5	5	5	5	4	4	4	57	60	95.00
20	MN	5	4	4	4	5	5	4	5	5	5	5	5	56	60	93.33
21	MPW	5	5	5	5	4	5	5	5	5	5	5	5	59	60	98.33
22	NAM	5	5	5	5	5	5	5	5	5	5	5	5	60	60	100.00
23	JTU	4	4	5	5	5	5	4	5	5	5	5	4	56	60	93.33
24	RA	4	4	3	5	5	3	5	4	3	5	5	5	51	60	85.00
25	RJ	5	5	5	5	5	5	4	5	5	5	5	5	59	60	98.33
26	RAS	5	5	5	5	5	4	3	5	5	4	5	5	56	60	93.33
27	AMZ	5	4	5	5	4	5	3	5	4	5	4	5	54	60	90.00
28	MN	5	4	5	4	4	4	5	4	4	4	4	5	52	60	86.67
29	DA	4	4	5	5	5	5	5	5	5	5	5	5	58	60	96.67
30	YDS	5	4	5	5	5	5	5	5	5	5	5	5	59	60	98.33
Teachers																
31	AY	5	5	5	5	5	5	5	5	5	4	5	5	59	60	98.33
32	YF	5	5	5	5	5	5	4	4	5	5	5	5	58	60	96.67
	Total	150	147	151	151	152	150	143	149	149	150	151	149	1792	1920	93.33

Table 8 titled Media Need Analysis presents the results of the needs analysis for learning media from 30 students and 2 teachers based on 12 questions (Q1–Q12) with a maximum score of 60. Each respondent has an individual acquisition score that is converted into a percentage. The results show that most students and teachers have a high level of need for learning media, with many scoring above 90%, and some achieving a perfect score (100%). The overall average of all respondents was 93.33%, indicating that there is a very strong need for the development or use of more effective and relevant learning media. The summary of the obtained scores is presented in the form of a graph as shown below.

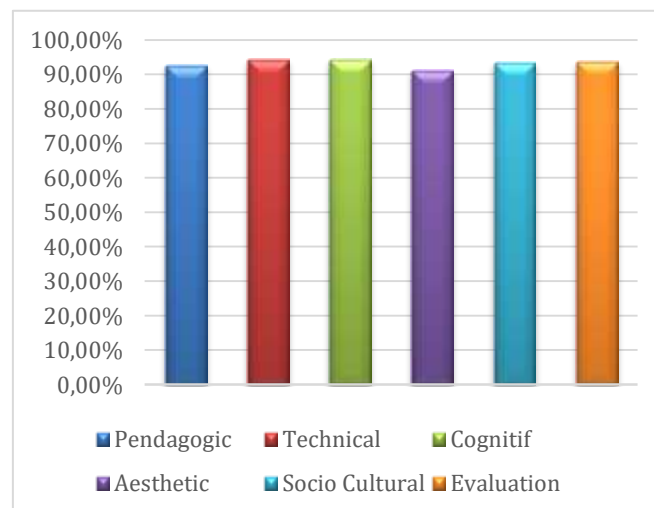


Figure 3. Media Analysis Questionnaire Recap

## **Discussion**

After conducting an analysis of teacher and student needs, the researcher continued with a media needs analysis by examining several key aspects. The pedagogical aspect received a score of 92.81%, indicating that students and teachers require media that can actively engage learners and support instructional goals. This high score reflects existing limitations in conventional instructional practices, where teacher-centered methods and minimal use of interactive media often reduce student participation and learning motivation. Interactive multimedia offers opportunities for active learning through exploration, interaction, and immediate feedback, which are particularly important in cultural arts education. Effective pedagogical design can foster interaction, motivation, and deeper understanding (Mayer, 2021).

The technical aspect, with a score of 94.38%, shows that there is a strong need for media that is easy to access and operate across various devices. This finding suggests that both teachers and students are increasingly accustomed to using digital technology in daily life, yet they require learning media that are practical, user-friendly, and compatible with available infrastructure. Technically accessible media enable teachers to integrate digital resources more consistently into classroom practice without increasing instructional burden. Technical simplicity enhances usability and integration into learning environments (Park & Kim, 2021).

For the cognitive aspect, which also scored 94.38%, the findings suggest a need for media that supports conceptual understanding, especially when dealing with abstract or complex topics. The high demand in this aspect indicates that traditional text-based or oral explanations are often insufficient to help students grasp the meaning, structure, and cultural significance of *Senjang*. Multimedia elements such as animations, visualizations, and interactive features help reduce cognitive load and provide concrete representations, thereby facilitating deeper conceptual understanding. Multimedia elements such as animation, visualizations, and interactivity help scaffold learning effectively (Mayer, 2021).

The socio-cultural aspect, which scored 93.44%, highlights the importance of learning media that reflect local values and cultural relevance. This result underscores the close relationship between local wisdom, student identity, and meaningful learning. Media that integrate local cultural expressions such as *Senjang* not only preserve cultural heritage but also strengthen students' sense of identity and belonging. When students see their own cultural context represented in learning materials, learning becomes more authentic, relevant, and personally meaningful. When media incorporates elements of learners' own culture, it fosters engagement and contextual understanding (Gunawardena et al., 2021).

The aesthetic aspect, with a score of 91.25%, reveals that learners prefer visually appealing and well-designed media. This preference indicates that visual quality is not merely decorative but plays a functional role in sustaining attention and enhancing comprehension. Well-organized layouts, appropriate color combinations, and smooth animations help learners focus on essential content while minimizing distractions. Aesthetic features such as color harmony, balanced layout, and motion graphics can improve attention and reduce cognitive overload (Issa, Abahussain, & Al Qarni, 2020). Lastly, the evaluation aspect received a score of 93.75%, underscoring the importance of including formative assessments such as quizzes and instant feedback in media. The strong need for evaluation features reflects teachers' and students' expectations for

transparent learning progress and immediate reinforcement. Interactive assessments enable teachers to monitor understanding in real time and allow students to reflect on their learning outcomes independently. These features help both teachers and students track progress and adjust learning strategies (Nguyen et al., 2021).

Based on these results, both students and teachers demonstrated a very high level of need across all categories, with an average score of 93.33%. This consistently high level of need indicates not only a demand for digital learning media but also a response to gaps in existing instructional practices. Practically, these findings imply that teachers require pedagogically structured, culturally grounded, and technologically feasible multimedia to support effective instruction, while curriculum developers should prioritize the integration of local wisdom into interactive media to enhance relevance and sustainability. This confirms the urgency for developing innovative digital learning media that is pedagogically sound, technically accessible, cognitively supportive, aesthetically pleasing, culturally appropriate, and evaluative in nature.

## **Conclusion**

Based on the results of the analysis of the needs for the use of gadgets, the needs of students and teachers, and the need for learning media, it can be concluded that there is a high urgency to develop interactive learning media based on local wisdom. The findings show that the majority of gadget users in learning are students, with the highest proportion coming from female students. Analysis of 10 indicators of student needs resulted in an average achievement of 96.93%, indicating a very high need for media that supports understanding of the material, increases motivation, and creates a fun learning experience. Specific aspects such as pedagogic, cognitive, technical, aesthetic, and evaluation also showed high scores, with the majority of students stating that learning media must be interactive, visually appealing, easy to use, and able to provide direct feedback. Meanwhile, two teachers who were respondents showed equally high needs, with an average score reaching 98.33%, emphasizing the importance of innovative learning media that integrates local values with a modern pedagogical approach. Overall, the average need for learning media from all respondents reached 93.33%, strengthening the urgency of developing effective media.

These findings indicate a clear gap between existing learning practices and the expectations of students and teachers, particularly in the context of cultural arts education that incorporates local wisdom. The consistently high level of need across all aspects reflects the limitations of conventional learning media in accommodating students' characteristics and supporting meaningful learning experiences. Thus, the development of interactive learning media based on local wisdom is a strategic solution to increase student understanding, motivation, and involvement, especially in arts and culture learning.

Based on these conclusions, future research is recommended to proceed to the development stage by designing, validating, and implementing interactive multimedia based on local wisdom, particularly Senjang, followed by empirical testing of its effectiveness in improving learning outcomes, motivation, and cultural understanding. Further studies may also explore broader samples and different school contexts to strengthen the generalizability of the findings and to examine the long-term impact of

local wisdom-based multimedia on students' cultural identity and character development.

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