

# Analysis of the Need for Interactive Learning Media Based on Canva Integrated with Wordwall to Increase Student Interest in Learning about Electrolyte and Non-electrolyte Solutions

Indah Nuraini<sup>1\*</sup>, Muflihah<sup>2</sup>, Yuli Hartati<sup>3</sup>

<sup>1,2,3</sup>Chemistry Education, Faculty of Teacher Training and Education, Mulawarman University, Indonesia

<sup>1</sup>[indahaini.572@gmail.com](mailto:indahaini.572@gmail.com), <sup>2</sup>[muflihah@fkip.unmul.ac.id](mailto:muflihah@fkip.unmul.ac.id), <sup>3</sup>[yuli.hartati@fkip.unmul.ac.id](mailto:yuli.hartati@fkip.unmul.ac.id)

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## ABSTRACT

Students' low interest in learning about electrolyte and non-electrolyte solutions is caused by the abstract nature of the concepts and the limited use of interactive learning media. This study aims to analyze students' needs regarding the development of interactive learning media based on Canva integrated with Wordwall to enhance learning interest. The study employed a quantitative descriptive design with a sample of 42 twelfth-grade students and one chemistry teacher at SMA Negeri 9 Samarinda, selected through purposive sampling. Data were collected via questionnaires and interviews, then analyzed using descriptive percentage statistics. The results showed that all 21 questionnaire items were valid with very high reliability (Cronbach's Alpha = 0.939). A total of 84.52% of students needed media capable of visualizing concepts, 80.95% possessed technological readiness, and 76.17% were ready to use interactive media. The findings also indicate a correlation between learning interest, the use of learning media, and the need for interactive media, where media limitations impact suboptimal student engagement. Interview results reinforce the need for media featuring visualization, video, and gamification. Thus, the development of Canva-based media integrated with Wordwall is deemed relevant for enhancing learning interest and student engagement.



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## A. INTRODUCTION

Education is the cornerstone of shaping a generation that is high-quality, creative, and capable of competing in the global era. Learning success is determined not only by active academic achievement but also by students' active engagement in the learning process, which shows a positive correlation with students' academic performance (Okunuki & Kashimura, 2024). One internal factor influencing this engagement is learning interest, which plays a role in fostering students' attention, participation, and dedication, and is associated with improved learning outcomes (Primastami & Insani, 2024).

Learning interest is a psychological tendency reflected through a sense of curiosity, enjoyment, and a desire to engage in learning, with indicators such as attention, activity, engagement, and enthusiasm (Rozikin et al., 2018). This interest is dynamic and influenced by both internal and external factors, including the learning strategies employed. Relevant and engaging strategies have been shown to increase student interest and engagement (Wahyuni et al., 2025).

However, low interest in learning remains a problem, particularly in chemistry instruction, which tends to be abstract (Aminah, 2021). The material on electrolyte and non-electrolyte solutions is difficult to understand because it involves microscopic concepts that lack context when presented conventionally, as well as low understanding at the macroscopic, submicroscopic, and symbolic levels (Ishak et al., 2022). In addition, the dominance of lecture methods and the limitations of interactive visual media have an impact on low student engagement and interest in learning (Priliyanti et al., 2021; Asmi et al., 2024).

The use of technology-based interactive learning media is one solution to address these issues. Interactive media can present material in a visual, dynamic, and engaging way, thereby increasing student engagement and interest in learning (Anggraeni et al., 2021; Damayanti et al., 2025). Canva can be used to present material visually, while its integration with Wordwall enables interactive, game-based assessments that boost student motivation and engagement (Nisa & Susanto, 2022; Sukmawati et al., 2025; Rosyid & Alwi, 2024).

Research on interactive learning media generally focuses on its implementation and effectiveness regarding learning outcomes, motivation, and student engagement (Damayanti et al., 2025; Rosyid & Alwi, 2024; Anggraeni et al., 2021). However, analyzing student needs as an initial stage of media development is still rarely conducted. Furthermore, research on Canva and Wordwall has largely been conducted separately, with Canva focusing on visual aspects (Sukmawati et al., 2025) and Wordwall on interactive assessment (Nisa & Susanto, 2022; Dewi et al., 2025). The integration of both into a single student-needs-based medium remains limited.

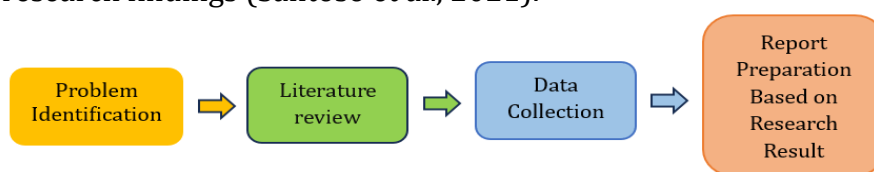
Studies specifically analyzing student needs regarding Canva-based interactive learning media integrated with Wordwall for electrolyte and non-electrolyte solution materials are also rarely found (Asmi et al., 2024). Yet, the abstract nature of the material and its reliance on various representations demand media designed to meet student needs. Based on this, this study aims to analyze students' needs regarding Canva-based interactive learning media integrated with Wordwall to enhance students' interest in learning. Specifically, this study identifies students' needs regarding interactive media, their expectations regarding the media's features and appearance, as well as learning challenges that need to be accommodated in media development. The results of this study are expected to serve as a relevant foundation for designing interactive learning media that align with students' needs and characteristics in chemistry learning.

## **B. METHODS**

This study is a quantitative descriptive study aimed at objectively describing phenomena based on data obtained in numerical form (Nurhabiba et al., 2023). The research focuses on analyzing students' needs regarding the development of technology-based learning media, with data collected through questionnaires and supplemented by teacher interviews. The study was conducted at State High School 9 Samarinda with a sample of 42 twelfth-grade students (phase F) and one chemistry teacher selected using purposive sampling, with the criteria being students currently studying or having studied the material on electrolyte and non-electrolyte solutions, as well as the teacher responsible for that material.

The research stages were carried out systematically, as shown in Figure 1, including: (1) problem identification through a preliminary study to determine the research focus related to students' needs for interactive learning media; (2) a literature review by examining various relevant sources as the theoretical basis for the research; (3) data

collection through the distribution of questionnaires to students and interviews with teachers to obtain information regarding the need for media development and readiness for its use; and (4) preparation of the research report by processing and analyzing data based on the research findings (Santoso et al., 2021).



**Figure 1.** Research Flowchart

Data collection was conducted by distributing an online questionnaire using Google Forms to students and conducting face-to-face interviews with teachers. The questionnaire was used to obtain an overview of students’ learning interests and their needs for interactive learning media (Nursalam & Djhaa, 2023).

The questionnaire instrument was designed based on five key aspects, including: students’ interest in chemistry learning, needs for interactive learning media, needs for Canva-based media, needs for Canva interactive media integrated with Wordwall, and students’ readiness for technology. These five aspects were coded as A1–A5 and elaborated into 22 statement indicators. Measurements used a four-point Likert scale without a neutral option, ranging from a score of 4 (strongly agree) to 1 (strongly disagree) (Sugiyono, 2019). As shown in Table 1.

**Table 1.** Likert Scale Criteria

Criteria	Scale
Strongly Agree (SS)	4
Agree (S)	3
Disagree (DS)	2
Strongly Disagree (SD)	1

**Source:** (Sugiyono, 2019)

Before use, the instrument was pilot-tested on 20 students to assess its validity and reliability. Validity was tested using Pearson’s Product-Moment correlation with the criterion of calculated  $r >$  table  $r$  at a significance level of 0.05, while reliability was assessed using Cronbach’s Alpha to determine the instrument’s internal consistency (Ghozali, 2021; Arfizeah et al., 2025).

Questionnaire data were analyzed using descriptive statistics (percentages) with the formula  $P = \frac{n}{N} \times 100\%$ , where P is the percentage, n is the actual score of the respondent, and N is the maximum score for each item. This analysis was used to present data in a simple and communicative manner, thereby facilitating the interpretation of response trends and the drawing of conclusions regarding students’ needs for interactive learning media (Sugiyono, 2013; 2019). The criteria for interpreting percentages were adapted from Riduwan (2015) in Gani et al. (2024) with adjustments for a four-point Likert scale, and the results were interpreted based on the criteria in Table 2.

**Table 2.** Criteria for Descriptive Percentage Statistical Analysis

Precentage	Criteria
76% - 100%	Strongly Agree
51% - 75%	Agree
26% - 50%	Disagree
1% - 25%	Strongly Disagree

**Source:** Gani et al., 2024.

In addition to the questionnaire, semi-structured interviews with chemistry teachers were conducted as supporting data to explore perspectives regarding learning conditions, media use, and the need for interactive media development. The interview guidelines covered seven aspects: learning strategies and methods, media use, learning constraints, needs for interactive media, knowledge of Canva and Wordwall, facilities and infrastructure, and readiness for media innovation, which were developed into 20 indicator questions (A1–A7). Interview data were analyzed using thematic analysis to identify patterns and meanings of learning needs. The analysis stages followed Hayes (as cited in Nurhayati et al., 2024), which included data preparation and grouping, identification of relevant data, grouping by theme, formulation of categories, re-examination of themes, and the formulation of final themes along with their meanings and supporting data for reporting findings. This process was conducted systematically to ensure the consistency and validity of data interpretation.

### C. RESULT AND DISCUSSION

#### 1. Topic Analysis

Based on the Decision of the Head of the Agency for Standards, Curriculum, and Educational Assessment of the Ministry of Education, Culture, Research, and Technology No. 046/H/KR/2025, the material on electrolyte and non-electrolyte solutions is taught in Phase F (grades 11–12) of the Merdeka Curriculum. This document contains general learning outcomes; therefore, in this study, a content analysis was conducted to identify the structure of concepts and characteristics of the topics studied by students, along with their respective levels of representation, as presented in Table 3.

**Table 3.** Analysis of Electrolyte and Non-electrolyte Solutions

<b>Basic Concepts</b>	
<b>Subtopic</b>	<b>Level of Representation</b>
Definition of electrolyte and non-electrolyte solutions	Macroscopic
Differences between electrolytes and nonelectrolytes	Macroscopic & submicroscopic
Classification of strong and weak electrolytes	Macroscopic & symbolic
Electrical conductivity test	Macroscopic & submicroscopic
<b>Ionization Process</b>	
Ionization Process in Water	Submicroscopic & symbolic
Ionization reaction equation	symbolic
Degree of ionization	symbolic
Relationship between the number of ions and electrical conductivity	submicroscopic
<b>Factors Affecting Electrical Conductivity</b>	
Solution concentration	Macroscopic & submicroscopic
Type of solute	Macroscopic & submicroscopic
Temperature	Macroscopic

The analysis results indicate that the material covers the basic concepts of electrolyte and non-electrolyte solutions, the classification of electrolytes, electrical conductivity tests, the ionization process, and factors affecting electrical conductivity. Each subtopic involves a combination of different representations, thus requiring learning media capable of comprehensively visualizing the concepts.

## 2. Analysis of the Validity and Reliability of the Research Instrument

The questionnaire instrument, developed based on the analysis of the material, was subsequently tested for validity and reliability to ensure its suitability as a measurement tool. The results of the instrument's validity test are presented in Table 4.

**Table 4.** Results of the Validity Test for the Student Needs Questionnaire Instrument

Aspect	Item Number	Significance Value	Pearson Correlation (n=20)	Criteria
Students' interest in learning chemistry	A1. 1	<0.001	0.764	Valid
	A1. 2	<0.001	0.694	Valid
	A1. 3	0.015	0.549	Valid
	A1. 4	<0.001	0.797	Valid
	A1. 5	0.003	0.638	Valid
	A1. 6	<0.001	0.713	Valid
	Mean		0.695	
Need for interactive learning media	A2. 1	0.092	0.397	Invalid
	A2. 2	0.004	0.634	Valid
	A2. 3	<0.001	0.758	Valid
	A2. 4	<0.001	0.766	Valid
	A2. 5	<0.001	0.801	Valid
	Mean		0.671	
Need for Canva-based media	A3. 1	0.003	0.640	Valid
	A3. 2	0.005	0.614	Valid
	A3. 3	<0.001	0.740	Valid
	Mean		0.664	
The need for Canva interactive media integrated with Wordwall	A4. 1	<0.001	0.787	Valid
	A4. 2	0.009	0.583	Valid
	A4. 3	<0.001	0.823	Valid
	A4. 4	<0.001	0.758	Valid
	A4. 5	<0.001	0.743	Valid
	Mean		0.738	
Students' readiness for technology	A5. 1	0.003	0.639	Valid
	A5. 2	0.019	0.531	Valid
	A5. 3	<0.001	0.765	Valid
	Mean		0.645	

Based on the IBM SPSS 31 output presented in Table 4, the validity test results indicate that most items across the five aspects have calculated  $r$  values greater than the critical  $r$  value (0.4438) with a significance level of  $< 0.05$ . All items in the aspects of learning interest (A1), need for Canva-based media (A3), need for Canva-Wordwall integration (A4), and technological readiness (A5) were deemed valid, whereas in the aspect of need for interactive media (A2), there was one invalid item ( $r = 0.397$ ;  $\text{sig} = 0.092$ ). Overall, out of the 22 items tested, 21 items were deemed valid, and one item was eliminated to improve the instrument's quality. This aligns with the validity criteria, which state that an item is valid if the calculated  $r > \text{table } r$  and the significance level is  $< 0.05$  (Ghozali, 2021).

Furthermore, the results of the instrument's reliability test using Cronbach's Alpha showed a value of 0.945, which falls into the very high category. This finding indicates that the instrument possesses a very strong level of internal consistency, thereby deeming all questionnaire items reliable and suitable for use in research (Ghozali, 2021).

### 3. Analysis of Student Needs Regarding the Development of Interactive Learning Media Based on Canva Integrated with Wordwall on Electrolyte and Non-electrolyte Solutions

After the instrument was declared valid and reliable, its validity was retested on the main data (n = 42) using Pearson’s Product-Moment correlation. The results of this test are presented in Table 5.

**Table 5.** Results of the Questionnaire Validity Test Based on Student Needs Data

Aspect	Item Number	Significance Value	Pearson Correlation (n=42)	Criteria
Students' interest in learning chemistry	A1. 1	<0,001	0,545	Valid
	A1. 2	<0,001	0,617	Valid
	A1. 3	<0,001	0,538	Valid
	A1. 4	<0,001	0,591	Valid
	A1. 5	<0,001	0,509	Valid
	A1. 6	<0,001	0,643	Valid
	Mean		0,573	
Need for interactive learning media	A2. 1	<0,001	0,620	Valid
	A2. 2	<0,001	0,738	Valid
	A2. 3	<0,001	0,725	Valid
	A2. 4	<0,001	0,753	Valid
	Mean		0,709	
Need for Canva-based media	A3. 1	<0,001	0,739	Valid
	A3. 2	<0,001	0,669	Valid
	A3. 3	<0,001	0,764	Valid
	Mean		0,724	
The need for Canva interactive media integrated with Wordwall	A4. 1	<0,001	0,658	Valid
	A4. 2	<0,001	0,586	Valid
	A4. 3	<0,001	0,789	Valid
	A4. 4	<0,001	0,760	Valid
	A4. 5	<0,001	0,846	Valid
	Mean		0,727	
Students' readiness for technology	A5. 1	<0,001	0,678	Valid
	A5. 2	<0,001	0,685	Valid
	A5. 3	<0,001	0,815	Valid
	Mean		0,726	

Based on Table 5, validity testing of the main data (n = 42) showed that all 21 items had a calculated r value > 0.304 with a significance level < 0.05, so all items were deemed valid. These results confirm that the instrument is capable of accurately measuring students’ needs.

Furthermore, the reliability test results on the main data showed a Cronbach’s Alpha value of 0.939, which falls into the very high category. This indicates that the instrument has an excellent level of internal consistency, so all items were deemed reliable and capable of consistently measuring students’ needs. Thus, these reliability test results further reinforce the validity of the previous findings, making the instrument used appropriate and trustworthy.

After the instrument was deemed valid and reliable, the subsequent analysis focused on the distribution of student responses for each indicator through percentage calculations. The results of the questionnaire analyzing student needs regarding the

development of interactive learning media based on Canva integrated with Wordwall to enhance learning interest in electrolyte and non-electrolyte solutions are presented in Table 6.

**Table 6.** Results of the Student Needs Questionnaire Analysis

Item	Indicator	Percentage	Criteria
A1. 1	Understanding the level of student interest in the material on electrolyte and non-electrolyte solutions.	71.42%	Agree
A1. 2	Understanding students' enjoyment in learning about electrolyte and nonelectrolyte solutions in chemistry.	72.61%	Agree
A1. 3	Understanding students' attention during the learning process of electrolyte and non-electrolyte solutions.	83.33%	Strongly Agree
A1. 4	Understanding students' enthusiasm when learning about electrolyte and non-electrolyte solutions.	70.83%	Agree
A1. 5	Understanding students' active engagement in learning about electrolyte and non-electrolyte solutions.	72.02%	Agree
A1. 6	Understanding students' awareness in learning about electrolyte and non-electrolyte solutions.	61.31%	Agree
A2. 1	Understanding students' need for media that visualizes the concepts of electrolyte and non-electrolyte solutions.	84.52%	Strongly Agree
A2. 2	Understanding students' needs for media that aids in understanding chemical concepts.	78.57%	Strongly Agree
A2. 3	Understanding students' needs for interactive learning media in the subject matter of electrolyte and non-electrolyte solutions.	76.19%	Strongly Agree
A2. 4	Understanding students' expectations regarding the use of media that can increase their interest in learning chemistry.	75%	Agree
A3. 1	Understanding students' needs regarding the use of Canva-based media for material on electrolyte and non-electrolyte solutions.	82.73%	Strongly Agree
A3. 2	Understanding students' preferences for visually appealing designs in Canva-based learning media.	80.35%	Strongly Agree
A3. 3	Understanding students' perceptions regarding the use of Canva in aiding their understanding of electrolyte and non-electrolyte solutions.	79.16%	Strongly Agree
A4. 1	Understanding students' interest in quizzes or educational games in chemistry learning.	77.38%	Strongly Agree
A4. 2	Understanding students' needs for interactive practice questions in chemistry lessons on electrolytes and nonelectrolytes.	75.59%	Agree
A4. 3	Understanding students' perceptions of the use of Wordwall as an interactive assessment tool.	76.19%	Strongly Agree
A4. 4	Understanding students' interest in the integration of Canva and Wordwall into a single learning medium.	76.78%	Strongly Agree
A4. 5	Understanding students' expectations regarding the use of Canva integrated with Wordwall to enhance learning interest.	77.97%	Strongly Agree
A5. 1	Understanding ownership of digital devices that support learning.	80.95%	Strongly Agree
A5. 2	Understanding students' ability to use digital devices for learning.	80.95%	Strongly agree
A5. 3	Understanding students' readiness to use interactive learning media based on Canva integrated with Wordwall.	76.19%	Strongly Agree

Overall, the data in Table 6 indicate a positive attitude among students toward the development of interactive learning media based on Canva integrated with Wordwall. The highest percentage regarding the need for concept visualization (A2.1), at 84.52% (strongly agree), underscores the importance of presenting material that is concrete, engaging, and interactive. The high percentages regarding Canva’s visual design aspects (A3.1–A3.2) and technological readiness (A5.1–A5.3) indicate student interest and support for the tools. To reinforce these findings, interviews were conducted with chemistry teachers regarding learning interests and media needs, with a summary of the results presented in Table 7.

**Table 7.** Results of Teacher Interview Analysis

<b>Item</b>	<b>Statement</b>	<b>Code</b>	<b>Category</b>	<b>Theme</b>
A1. 1	Independent curriculum with in-depth learning	Curriculum autonomous	Learning policies	Learning conditions
A1. 2	Simple laboratory-based learning	Practicum	Learning Strategies	Learning conditions
A1. 3	Increased engagement, interest, not yet consistent	Low engagement and interest	Interested students	Interest in learning
A2. 1	Limited use of worksheets, books, websites, and PowerPoint presentations	Media Conventional	Use of media	Learning conditions
A2. 2	Positive response, some technical issues	Positive response, challenges	Learning experience	Interest in learning
A2. 3	Increased engagement, interest not yet optimal	Interest not yet optimal	Student engagement	Interest in learning
A3. 1	Difficulty with individual assessment	Difficulty Assessment	Learning barriers	Learning constraints
A3. 2	Low learning interest among some students	Low interest	Learning motivation	Interest in learning
A4. 1	Interactive media is needed	Media needs	Learning needs	Media needs
A4. 2	Interactive media boosts interest	Development of media	Learning innovation	Media needs
A4. 3	Media: video, feedback games, virtual labs	Interactive features	Media design	Media requirements
A5. 1	Canva boosts engagement and interest	Interactive Canva	Digital media	Media requirements
A5. 2	Educational games boost interest	Educational games	Interactive media	Media requirements
A5. 3	Positive smartphone media access	Smartphone access	Learning technology	Technology readiness
A6. 1	The school provides a projector	Facilities available	Learning resources	Technology readiness
A6. 2	Students have smartphones	Ownership of devices	Student readiness	Technology readiness
A6. 3	Internet is sufficiently supportive	Stable network	Infrastructure	Technology readiness

A7.1	Expectations for game-based and contextual media	Innovative media	Learning design	Media needs
A7.2	Teachers ready to use Canva integrated with Wordwall	Readiness Teacher	Implementation	Technology readiness
A7.3	Teachers and students are ready to use digital media	Readiness user	Technology adoption	Technology readiness

The thematically analyzed interview results yielded four main themes: learning conditions, interest in learning, media needs, and technological readiness. Instruction has been aligned with the Merdeka Curriculum, but it remains dominated by simple methods with limited media resources. Students demonstrated engagement, but learning interest was not yet uniform. Teachers emphasized the importance of visual-based interactive media equipped with game features, videos, and feedback, with Canva and Wordwall as potential alternatives. In terms of readiness, schools and students already possess adequate facilities and capabilities to support digital-based learning.

#### 4. Discussion

The research results indicate that the analysis of student needs regarding the development of interactive learning media based on Canva integrated with Wordwall has a strong conceptual and empirical foundation. The characteristics of electrolyte and non-electrolyte solutions, which involve macroscopic, submicroscopic, and symbolic representations, require media capable of comprehensively visualizing concepts, particularly abstract ones such as ionization processes and electrical conductivity. Without appropriate media support, learning becomes suboptimal and leads to low student interest and engagement.

Regarding the instrument, the results of the validity and reliability tests indicate that the questionnaire meets the standards for measurement validity. In a pilot test with 20 respondents, one of the 22 items was eliminated because it did not meet validity criteria, leaving 21 items for use in the main study. Guvendir & Ozkan (2022) explain that items with low contribution to the structural factors should be eliminated to ensure the instrument has optimal measurement quality. In the testing of the main sample ( $n = 42$ ), all items were deemed valid with a significance level  $< 0.05$  and correlation coefficients above the critical value. A Cronbach's Alpha value of 0.939 indicates very high internal consistency, thereby deeming the instrument accurate and reliable in measuring students' needs.

Analysis results indicate that students' learning interest falls into the high category, though this has not yet been fully accompanied by optimal engagement. This is evident from the high demand for media capable of visualizing concepts. Students also demonstrated a preference for using Canva with its visually appealing interface, as well as the integration of Wordwall in the form of game-based assessments. Additionally, students' technological readiness supported by digital devices and adequate internet access strengthens the potential for implementing interactive media. These findings are reinforced by interview results indicating that learning is still dominated by conventional methods with limited media resources. Although practical exercises increase student engagement, learning interest remains uneven. Teachers emphasize the importance of interactive media that include visualizations, videos, educational games, and immediate feedback to support learning.

Overall, there is a relationship between learning interest, media use, and the need for interactive media. Relatively high learning interest has not been matched by optimal media use, so student engagement has not been maximized. This indicates that learning interest is influenced not only by internal factors but also by the quality of learning media. Furthermore, student engagement does not automatically increase interest without the support of engaging and meaningful media (Wahyuni et al., 2025; Priliyanti et al., 2021). These findings align with research showing that the integration of Canva and Wordwall can enhance understanding, positive responses, interest, and learning motivation, while also supporting student creativity and collaboration (Khoerunnisa et al., 2025; Emalfida, 2024).

These findings are consistent with previous research showing that digital learning tools such as Canva and Wordwall can enhance students' interest, motivation, and engagement (Nisa & Susanto, 2022; Sukmawati et al., 2025; Dewi et al., 2025). Canva enhances visual appeal, while Wordwall supports interactive game-based assessment (Asmi et al., 2024; Anggraeni et al., 2021). Therefore, the needs analysis in this study provides a strong foundation for the development of more contextual and student-centered interactive learning media.

#### **D. CONCLUSION AND SUGGESTIONS**

Based on the results of the analysis and discussion, the questionnaire instrument used in this study was found to be valid and reliable with a very high level of internal consistency (Cronbach's Alpha = 0.939), making it suitable for identifying students' needs. The research findings indicate that students require interactive learning media capable of enhancing engagement and interest in learning about electrolyte and non-electrolyte solutions. These needs include media with visually appealing displays, the ability to visualize abstract concepts at the macroscopic, submicroscopic, and symbolic levels, as well as the provision of interactive game-based assessments through the integration of Canva and Wordwall.

The research findings also indicate that students' learning interest, which falls into the high category, has not yet been fully accompanied by optimal engagement, due to limitations in the use of interactive learning media. This suggests a relationship between learning interest, media usage, and the need for interactive learning media. Additionally, the learning challenges faced by students include difficulties in understanding abstract concepts as well as the limitations of conventional media that do not sufficiently support concept visualization. On the other hand, students possess adequate technological readiness, supported by ownership of digital devices and sufficiently stable internet access.

Interview results with teachers reinforce these findings, as teachers emphasized the need for more interactive, contextual learning media innovations capable of supporting higher-order thinking skills (C3–C4). Thus, the development of Canva-based interactive learning media integrated with Wordwall is recommended as a relevant solution to support the enhancement of students' learning interest and improve the quality of chemistry learning in accordance with the requirements of the Merdeka Curriculum.

Further research is suggested to proceed to the media development stage and test its effectiveness through a quasi-experimental design to evaluate its impact on students' interest and learning outcomes. Additionally, research with a broader and more diverse sample scope and the use of data triangulation, such as classroom observations and in-depth interviews, needs to be conducted to enhance the validity and generalizability of the research findings.

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