Langsa Multicultural Heritage Virtual Tour : Development of Diversity Literacy Media for Strengthening Global Diversity Awareness

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Abstract: This research aims to develop a learning media for the Langsa Multicultural Heritage Virtual Tour to strengthen students' awareness of global diversity. The study used a Research and Development (RnD) method with the 4-D model, which consisted of the stages of Define, Design, Develop, and Disseminate. The subject of this study was grade VII students at SMPN 13 Langsa City, with the consideration that this school is located in a transition area from a school in an urban area to a coastal area with multicultural characteristics. The instruments used included documentation studies, expert validation sheets, and student response questionnaires. Documentation studies were used to analyze curriculum documents and learning outcomes, while expert validation sheets evaluated the suitability of content, design, and practicality. The student response questionnaire, based on a Likert scale, measured the practicality, appeal, and effectiveness of the developed media. Data were analyzed using qualitative and quantitative descriptive techniques, such as expert feedback, tabulation, percentage calculations, and t-tests. The results indicated that the validation test of material experts yielded 86.6% in the very feasible category, and the media expert test yielded 96.6% in the very feasible category. The practicality test resulted in 99.6%, which is very good, the teacher's response was 95.5% in the very good category, and the student response was 93.3% in the very feasible category. The t-test results showed a calculated value of 5.2 with a p-value = 0.000 < 0.05, indicating a significant increase in global diversity knowledge after media treatment.

How to Cite: Riyani, M., Hanafiah, H., Rahman, A., Aprilia, R., & Dewi, I. P. (2025). Langsa Multicultural Heritage Virtual Tour : Development of Diversity Literacy Media for Strengthening Global Diversity Awareness. *Jurnal Kependidikan*, *11*(3), 1068-1081. https://doi.org/10.33394/jk.v11i3.16950

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Introduction

Global diversity is one of the dimensions of the character of Pancasila student profiles which is expected to help students to be ready to face progress inseparably from their own identity (Shofia Rohmah et al., 2023). Progress in the global era requires knowledge and skills to collaborate due to seamless interaction. This character can be built through diversity literacy which is essentially owned by the Indonesian nation as its identity. Every ethnic group in Indonesia has its historical roots and a collective memory related to its association with various nations and its respect for diversity.

More specifically, diversity in Aceh has a sociohistorical background. In the process of its formation, the people of Aceh were born and developed from the mixture of cross-cultures and races that made it a society *Hybrid* with the term *mixtum anthropology* (I. H. Sutrisno, 2018). The easiest example that is often used as proof is the acronym ACEH as a phoneme from Arabic, Chinese, European and Indian (India). A solid diversity can also be raised from

various kinds of art artifacts, historical relics and cultural dynamics that also show the cosmopolitanism of the Acehnese people (Junaidi & Riyani, 2017; Rahman, 2020; I. H. Sutrisno, 2018; T. Junaidi & Mufti Riyani, 2018). Previous research has proven the ability of diversity literacy as a social capital and a strength of a society, including in character formation (Martínez-Graña dkk., 2013). The relationship between diversity literacy as a capital for progress was also shown by foreign researchers (Charalambous dkk., 2016; Hanemann, 2018; Nguyen, 2010; Oh & Van Der Stouwe, 2008; Boughton, 2018).

Historical and cultural heritage scattered in Aceh has strong potential as a source of diversity literacy. The city of Langsa in the eastern coastal region of Aceh is one of the places where diversity has strong historical roots and an actual situation that is close to diversity. Langsa City as a multicultural city can be observed from various toponymies or naming of villages in the city of Langsa, even the origin of the city of Langsa also has the potential to be a source of diversity literacy (Riyani et al., 2020).

Langsa as a multicultural city has undergone a long integration process. Cultural factors, kinship, obedience to the government, mixed marriage and education are the main factors in the process of forming the Langsa community as a multicultural society (Fatia dkk., 2017). The form of multiculturalism in Langsa as part of the region on the East coast is displayed through the collective memory of multiculturalism that intersects with various historical relics and cultural heritage. One of them is shown with a house *Uleebalang* Langsa as a collective memory of the city-building process (Rahman, 2020).

The potential of Langsa as a media for diversity literacy, especially in the form of *Multicultural Heritage Virtual Tour* has a strategic position. The literature review conducted did not find similar articles or research, either with Langsa as an object or a designation *multicultural heritage virtual tour* as a strengthening of the character of global diversity. So far, global diversity has been more developed in the form of digital comics, e-books and various media-based *boardgame* (Cahyaningtyas et al., 2022; Nurjanah et al., 2023; Sabtaningrum et al., 2020; Soekmono et al., 2021; Wardhan & Rizkiantono, 2017; Winata & Putri, 2020).

Throughout the literature review, researchers have found several studies that utilize virtual tours for various purposes. Most studies are used in the fields of history and archaeology, particularly for the protection of cultural heritage (Yiakoumettis, 2014); (Longo, 2017) (Lang, 2019). The use of virtual tours is also common in the field of tourism (Ferrari, 2013); (Wu, 2018) (Njerekai, 2020); (Stappung, 2023) (Tuomi, 2023). (Varinlioglu, 2022) used virtual tours for Geographic Information System learning purposes. (Sinitò, 2020) did something similar with a more detailed focus on mineralogy and petrography. The role of virtual tours in learning is often associated with the pandemic situation (Fiorillo, 2021) (Varriale, 2021), distance learning (Luigini, 2020), and process learning (Checa, 2020). Based on data mining through the Publish or Perish application by search category, keywords: virtual tours of cultural heritage, publication year: 2010-2023, and a total of 200 articles in the Scopus database, 35 articles with h-index, 55 Google-indexed status, and 13 papers with high impact factors were found. However, from this Scopus database, none of the articles linked the concepts of virtual tours and cultural heritage with literacy, diversity, and global diversity.

The novelty of this research lies in the network of the concepts of multiculturalism, heritage, virtual tour, diversity literacy and global diversity characters. This has never been found in previous studies. The urgency of this research lies in the strategic need to develop learning media that can foster diversity literacy while strengthening global diversity awareness among students. The Pancasila Student Profile emphasizes the importance of global diversity as a character trait that enables young people to interact actively at the

international level without losing their national identity. However, a review of the literature shows that, to date, the use of virtual tours in education has been directed more towards tourism, archaeological documentation, and distance learning, without systematically integrating the values of multiculturalism and diversity literacy. This indicates a research gap that needs to be addressed.

On the other side, Aceh, especially Langsa City, has strong multicultural potential with its historical background, cultural artifacts, and collective memory of the community that represents the integration of diversity. This potential has not been optimally utilized as a source of technology-based learning. In fact, the use of virtual tours based on cultural heritage can provide an immersive learning experience that combines visual, auditory, and kinesthetic aspects. Thus, students not only gain cognitive knowledge, but also affective experiences that support the formation of attitudes of tolerance, appreciation of differences, and awareness of global diversity.

Based on the potential and problems above, this study aims to develop the Langsa *Multicultural Heritage Virtual Tour* as a diversity literacy media to strengthen the character of global diversity. *Virtual tours* have advantages among other forms of media because they can combine auditory styles, visual styles and kinesthetic styles in the learning process. *Virtual tours*, on the other hand, are multipurpose applied technologies that can be used for various purposes.

Research Method

This research employed a Research and Development (R&D) method using the 4D model, which consists of four stages: Definite, Design, Develop, and Disseminate (Thiagarajan, 1974). At each stage it is detailed in concrete steps. The first stage (Define or Definition) begins with Front-end Analysis, Learner Analysis, Task Analysis, Concept Analysis and Specifing Instructional Objectives.

Initial analysis is carried out to identify and determine the basis of the problem and the need for development. The picture of facts is carried out with several data collection techniques such as documentation studies on curriculum documents, learning outcomes and other documents, thus the development of media as an alternative solution can be developed optimally. Student analysis was carried out to identify the characteristics of students who were targeted for media development. The characteristics in question consider the characteristics, abilities, experience of students, academic abilities, age and motivation for this material. Then the task analysis was carried out with the aim of identifying.

The skills studied by the researcher can then be analyzed in the set of additional skills needed. Assignment analysis was developed based on the Learning Outcomes of the Independent Curriculum. Next, concept analysis is aimed at identifying the main concepts that will be used as content in the media and detailed more specifically and critically. These concepts are developed according to materials related to diversity literacy in schools. The last activity in the first stage is the formulation of Learning Objectives which are useful for summarizing the results of concept analysis and tasks to determine the behavior of the research object which will later become a dashboard to compile tests to measure the success of the developed media.

The second stage in the form of Design consists of the activity of compiling test standards, selecting the developed media, choosing the media format, and making an initial design. The format selection activity includes layout design, images, writing and layers in the Langsa Multicultural Virtual Tour that was designed. In the initial design activities, input from peers is very necessary before production.

The third stage, Develop or development is divided into expert appraisal activities, developmental testing by collecting user responses and assessing them as the basis for revision in order to arrive at the goal of effective and consistent media development. In the expert validation activity, the expert will conduct a review of the content before testing and become the basis for the initial product revision. The Langsa Multicultural Heritage Virtual Tour media was then rearranged according to expert input. Product trials will be conducted in a limited field group or small group. The limited group trial will be carried out at 1 junior high school in the city of Langsa with a random sampling group in accordance with scientific requirements. The trial was carried out to measure the effectiveness of the media developed, especially to measure knowledge about diversity. The fourth stage, disseminate or disseminate is carried out to promote development results so that they can be used for wider goals. This stage also opens up opportunities for further development by gathering responses from the wider user community.

The subject of this study is grade VII students at SMPN 13 Langsa City with the consideration that this school is located in a transition area from a school in an urban area to a coastal area with multicultural characteristics. The expected result is a diversity literacy media in the form of a Langsa Multicultural Heritage Virtual Tour that is feasible and effective to increase knowledge in the character of global diversity. The instruments used in this study included documentation studies, expert validation sheets, and student response questionnaires. Documentary studies were used to analyze curriculum documents and learning outcomes as a basis for media design, while expert validation sheets evaluated the feasibility of the content, design, and practicality of the Langsa Multicultural Heritage Virtual Tour. Student response questionnaires, adapted from the Likert scale, measured the practicality, appeal, and effectiveness of the developed media. The collected data were analyzed using descriptive qualitative and quantitative techniques: qualitative analysis was applied to expert feedback and documentation findings, while quantitative analysis was performed on questionnaire results through tabulation and percentage calculations. These analysis techniques were used to ensure that the systematically developed virtual tour media was valid and proven to be suitable for strengthening students' awareness of global diversity.

Results and Discussion

In the method section, it has been explained that this research is research *and development* (RnD) with a 4D model. This model consists of 4 main stages, namely Definite*,* Design*,* Develop , and *Disseminate*. At each stage it is detailed in concrete steps.

1) The first stage (*Define* or Define)

This stage begins with *Front-end Analysis*, *Learner Analysis*, *Task Analysis*, *Concept Analysis* and *Specifing Instructional Objectives*.

a) *Front-end analysis*

The front-end analysis described the initial condition of students' knowledge and skills related to global diversity at SMPN 13 Langsa. Interviews and observations revealed several challenges: the absence of appropriate learning media to support the teaching of global diversity in social studies, the lack of enrichment materials based on local potential, limited resources such as textbooks and teaching aids, and teachers' difficulty in accessing accurate information about diversity in Langsa. A diagnostic assessment involving 22 grade VII students showed that while some demonstrated good tolerance and understanding of diversity, many still lacked deeper comprehension of multiculturalism and global cooperation. This condition highlights the need for contextual media that connects students' learning with their socio-

cultural environment.
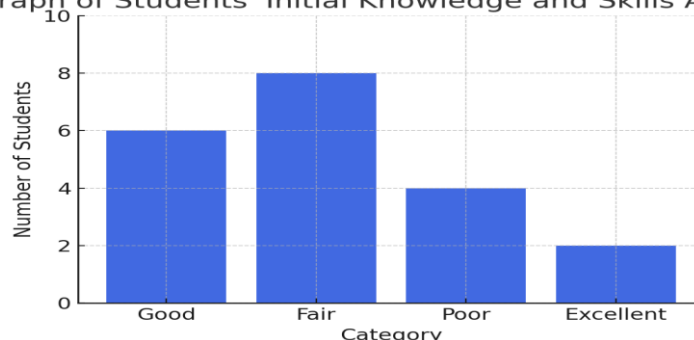
Key elements of global diversity identified include tolerance, respect for human rights, intercultural understanding and dialogue, education for diversity, cross-cultural collaboration, empowerment of local communities, rejection of discrimination, global cooperation, awareness of human interconnectedness, and recognition of identity. Both literature studies and field observations confirmed that students' global knowledge and skills remain low, while teachers lack relevant media and teaching materials to deliver contextualized diversity learning.

b) Learner Analysis

Abstract material requires students to need help in the form of learning media that can help with learning needs both independently and through facilitators. In addition, the characteristics of students from generation Z and generation Alpha need learning media that brings them closer to technological advancements. The media needed also needs to accommodate kinesthetic learning styles and combinations of them with interactively designed media, but also provide options for visual and auditory styles. Learning style analysis was carried out by utilizing online access by utilizing websites.

c) *Task Analysis*

The media developed has the task of being able to increase knowledge and skills with global diversity through the resources available in the learning media.

d) *Concept Analysis*

The content and type of media developed were designed to enhance students' knowledge and skills related to global diversity in accordance with the national curriculum. Referring to the Decree of the Head of BSKAP No. 009 of 2022 on the Dimensions, Elements, and Sub-Elements of the Pancasila Student Profile, the global diversity dimension consists of four core elements, namely: (1) knowing and appreciating culture, (2) communication and intercultural interaction, (3) reflection and responsibility for the experience of diversity, and (4) social justice. Each of these core elements is elaborated into more concrete sub-elements to ensure that learning objectives are measurable and contextually relevant. The development of these elements was specifically adapted for the Independent Curriculum at the end of Phase D (Grades VII–IX, ages 13–15 years).

e) *Specifing Instructional Objectives*

The learning objectives in the cognitive aspects set are: 1). Explaining the identity formed from the nation's culture, 2). Understanding cultural dynamics which includes understanding, beliefs and daily practices in a personal and social context, 3). Understanding the importance of preserving and celebrating cultural traditions to develop personal, social and national identity. 4). Psychomotor Aspects: 1).

Participate in determining mutually agreed criteria and methods to determine choices and decisions for the common good through the process of openly exchanging ideas, 2). Starting to actively take attitudes and steps to protect the rights of other people/groups. Affective Aspects: 1). Critically reflect on the image of various cultural groups encountered and how to respond to them, 2). Confirm, clarify and show the attitude of rejecting stereotypes and prejudices about the image of group and ethnic identity.

2) The second stage is *in* the form of Design
a) Choose the appropriate topic of study material

The formulation of the topic of the subject matter at this stage is carried out by reviewing the learning outcomes in the Independent Curriculum Phase D for the social studies maple. The general learning outcomes in this phase are "students are able to understand and have awareness of their existence and are able to interact with their immediate environment. He is able to analyze the relationship between regional geographical conditions and community characteristics and understand the potential of natural resources and their relationship with disaster mitigation. He was also able to analyze the relationship between the diversity of the geographical conditions of the archipelago and the formation of cultural pluralism. He is able to understand how the community tries to each other to be able to meet the needs of his life". The following is the flow of social studies learning objectives Phase D which is used as a consideration for the selection of topics.

Source: https://www.guru.kemdikbud.go.id
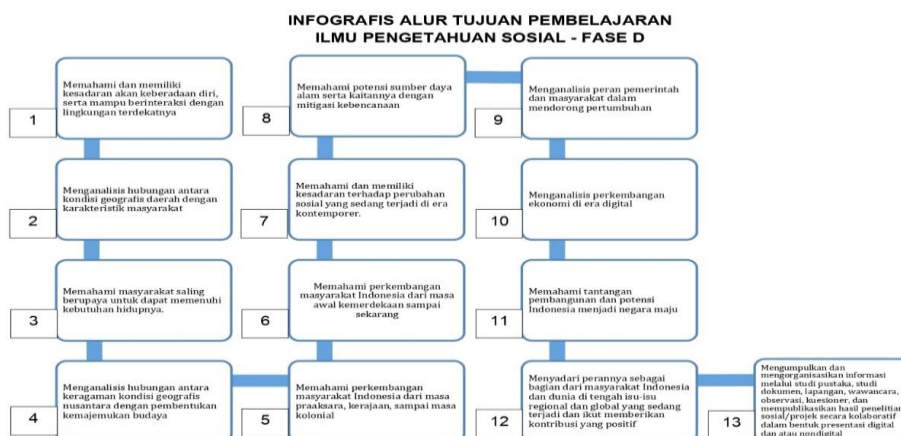
So based on the above explanation, the topic relevant to the theme of global biodiversity is theme 2. Diversity of the Surrounding Environment, sub-topic 2. Get to Know the Surrounding Environment according to the book Social Sciences for Junior High School/Mts Class VII by Muhammad Nursa'ban and Supardi issued by the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia in 2023 Revised Edition.

b) Activities to Prepare Test Standards

The test standards used use the Pancasila Student Profile Assessment Instrument issued by the Head of BSKAP No. 009 of 2022 Dimensions, Elements, and Sub-Elements of the Pancasila Student Profile in the Independent Curriculum. The assessment includes cognitive, affective and psychomotor assessments. Cognitive tests will be given in multiple questions that have been tested moderately for other

aspects using process assessment with an assessment range using the categories of Starting to Develop, Developing, Developing As expected and very developed.

c) Choosing the developed media: the developed media is an interactive media in the form of a web-based Virtual Tour with 360-degree image content accompanied by an explanation or description of the image and audio explanations. The domain name of the website that is developed is *Langsa multicultural heritage* with address https://www.langsamulticultural.com/

d) Choose a media format

The format selection activity includes the design of the website layout that is developed. images, writings and layers in *the Langsa Multicultural Virtual Tour* that is designed. In the initial design activities, input from peers is very necessary before production.

e) Make an initial plan.

The development of the *Langsa Multicultural Heritage Virtual Tour* was carried out based on the data and information obtained during the define stage. The media was designed with several main features, including a 360° virtual tour of multicultural heritage objects in Langsa, historical information for each selected site, interactive content such as videos, images, and maps, as well as options for background music and audio narration.

The website structure was organized into six main menus: *Home* (introduction and objectives), *Destination* (heritage sites with 360° tour), *Culture & History* (historical information), *Interactive Map* (location markers of heritage sites), *Gallery* (photos and videos of cultural activities), and *About Us* (project background and team). The UI/UX design emphasized cultural themes, simple structure, clear icons, and intuitive navigation to ensure accessibility for a wide range of users.

The virtual tour feature was developed using a 360° camera and VR Tour software, covering four main sites: Tuha Mosque in Kampung Teungoh, Langsa Church, Langsa Buddhist Temple, and the Langsa City Museum. Additional features included interactive maps supported by Google Maps API, audio narration to explain history and culture, and short videos for detailed exploration.

In terms of technical development, the frontend was built with HTML5 to ensure responsiveness across devices, while the backend used Node.js and MySQL for content management. A WordPress-based CMS was integrated to facilitate content updates. Compatibility tests were conducted on multiple browsers, and optimization was applied to ensure responsive design and fast access speed. The website was launched with a registered domain (www.langsamulticultural.com) and supported by SEO optimization to increase visibility. Maintenance strategies included periodic updates of cultural content and the provision of feedback forms for user input. Through this development process, the virtual tour platform was established as an interactive and educational medium that enables users to explore Langsa's multicultural heritage virtually while enhancing their awareness of global diversity. Here is an initial look at the developed wesite.

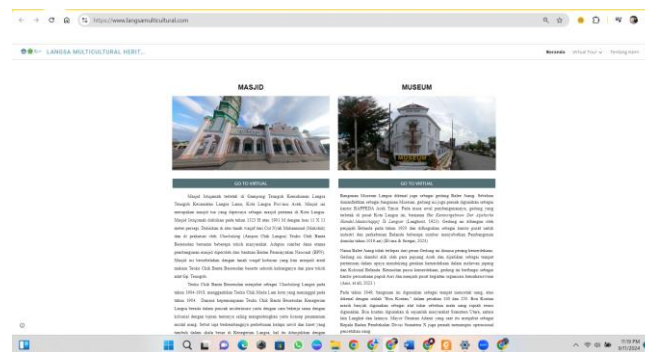**Figure 1. Home Page Website Langsa Multicultural Heritage Virtual Tour**

Figure 2. Historical information on selected objects
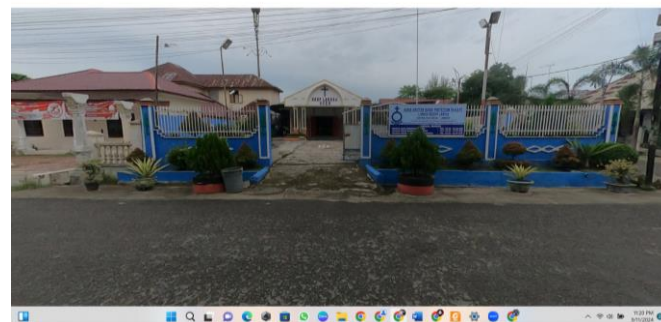

Figure 3. Virtual Tour Display at Langsa Church Objects

3) *Develop*

The development stage consists of assessments by experts and practitioners.

a) Expert *Appraisal*

Feasibility validation is carried out by lecturers, media experts and material experts. The results of the input are the basis for the revision of this media product. Currently, the research is in the validation stage and is planned to be completed soon so that the output target can be achieved. The media and material validator is Dr. Sugiantoro, M.Pd, lecturer in Social Studies Education at the University of Surabaya. The results of the expert validator's assessment are as follows:

Table 1. Material Validation

Indicator	Score
Material Completeness	4
Content eligibility	4
Depth of Material	4
Material Improvement	5
Material Accuracy	4

Indicator	Score
Material Support	4
Student Involvement	5
Discovering Your Own Knowledge	4
Introduction to Information	5
Total Score	**39**
Maximum Score	**45**

The questionnaire that has been filled out by the validator will then be analyzed and processed using a formula that will obtain a value that will be a reference for the researcher to determine the feasibility *of virtual tour* media. The following is the percentage formula used in this study:

$$P = \frac{\sum R}{N} \, 100\%$$

Information:
P = Percentage
R = Total Score of validator
N = Maximum Score

Table 2. The eligibility criteria follow the following guidelines:

Score	Information
81%-100%	Highly Worth It
61%-80%	Proper
41%-60%	Quite Decent
21%-40%	Invalid and needs revision

Based on the expert assessment of the material in the first stage, a score of 39 out of a maximum score of 45 was obtained. Therefore, the validity assessment percentage is 86.6%, which means that it is very feasible according to the criteria. Therefore, *Langsa Multicultural Virtual Tour* as a medium for strengthening global diversity character from the aspect of content or material is considered very feasible. However, there are several expert inputs, including paying attention to the sources used and the use of effective sentences that can help shape students' understanding in accordance with learning objectives. Validation on the media aspect obtained the following results:

Table 3. Media expert validator rating table.

Indicator	Score
Display	5
Presentation Mode	5
Text Quality	4
Picture	5
Accuracy of V*irtual Tour Features*	5
Software and Browsers	5
Total Score	**29**
Maximum Score	**30**

Based on the media expert assessment in the first stage, a score of 29 out of a maximum score of 40 was obtained. Therefore, the validity assessment percentage is 96.6%. The eligibility criteria for following the research guidelines fall into the highly eligible category. However, there are several inputs and suggestions provided by the validator, namely related to several typing errors and EYD that need to be considered. This media can be added to the quiz at the beginning and end of the exploration.

The next stage was the practicality assessment conducted by users or practitioners. The practitioner validator was Mrs. Husniati, S.Pd, principal of SMPN 13 Langsa. Stage 3. Practitioner assessment results, particularly for school principals, in a limited scale test at SMPN 13 Langsa.

Indicator	Score
Virtual Tour Media Image Display	10
Text Quality	9
Feature	10
Materials in Virtual Tour Media	10
Introduction to Information	5
Total Score	**44**
Maximum Score	**45**
Percentage	**99,6%**
Category	**Highly Worth It**

While the practicality test with the target of 4 social studies teachers obtained an average score of 43 or 95.5% and the practicality test on students with a total of 22 respondents students in the target class obtained an average score of 42 or 93.3% with the very feasible category.

b) *Developmental testing*

The developmental testing was carried out through a limited group trial at SMPN 13 Langsa with Grade VII students as a saturated sample, given the relatively small number of participants. The experimental design used was a one-shot case study, in which students received treatment using the *Langsa Multicultural Heritage Virtual Tour* for one 45-minute session, followed by a posttest consisting of 20 multiple choice items on global diversity knowledge. No pretest was administered.

Descriptive results showed that the average posttest score was 85, with a minimum of 70 and a maximum of 100. A one sample t-test indicated t = 5.2 with p = 0.000 < 0.05, signifying a significant improvement in students' knowledge of global diversity after the treatment. These findings confirm the effectiveness of the media in facilitating cognitive understanding, as students became more actively engaged in learning through interactive and multimedia features.

In addition to cognitive assessment, process evaluation was conducted to capture broader learning outcomes in the cognitive, affective, and psychomotor domains. The rubric revealed that in the *cognitive domain*, 72% of students reached the "grow as expected" category for cultural identity understanding, while 40% reached the "highly developed" category in appreciating the importance of cultural preservation. In the *affective domain*, 55% of students were able to critically reflect on cultural diversity, and 45% actively rejected stereotypes and prejudices. In the *psychomotor domain*, 65% of students actively participated in collaborative decision-making, and 45% took steps to protect the rights of others.

These results suggest that the *Langsa Multicultural Heritage Virtual Tour* not only improved cognitive knowledge of global diversity but also had a positive impact on students' affective attitudes and psychomotor skills. The integration of virtual heritage with interactive features encouraged students to engage critically, collaboratively, and responsibly in diversity learning.

The findings demonstrate that the *Langsa Multicultural Heritage Virtual Tour* is not only feasible and practical, as evidenced by expert and practitioner validation scores ranging from 86.6% to 99.6%, but also effective in significantly improving students' knowledge of global diversity (posttest mean score = 85; *t* = 5.2, *p* < 0.05). This aligns with studies indicating that

immersive and interactive virtual tour formats enhance user engagement and understanding (Battipede et al., 2024).

The integration of a multimodal learning approach that combines visual, auditory, and kinesthetic elements is an important strategy in improving the quality of student learning outcomes. At the junior high school level, the effectiveness of this approach has been tested through various studies. Chairuddin et al. (2025) found that eighth-grade students with a multimodal learning style had more flexible mathematical literacy skills than students with a single learning style. These findings confirm that diversity in learning modalities allows students to be more adaptive in understanding complex concepts.

In addition, research by Rahmatika et al. (2024) shows that visual learning styles are the most dominant preference among junior high school students. This indicates that the design of learning media needs to emphasize visual aspects as the main component, while still accommodating auditory and kinesthetic modalities. Thus, multimodal media can meet the needs of the majority of students while facilitating diversity in learning styles.

In line with this, (Zhang, 2024) reported that the application of multimodal learning in teaching English vocabulary in junior high schools was able to significantly improve posttest scores and stimulate students' enthusiasm for learning. This finding strengthens the basis for the development of the Langsa Multicultural Heritage Virtual Tour, which integrates various learning modalities. Sutrisno et al. (2024) emphasize that the integration of visual, auditory, and digital technologies not only improves cognitive outcomes but also increases student engagement and deepens understanding of the material.

Based on this empirical evidence, the development of the Langsa Multicultural Heritage Virtual Tour, which includes 360° navigation (visual), audio narration (auditory), and interactive features (kinesthetic), is highly relevant to the needs of digital generation students. This medium not only reflects the preferences of the majority of junior high school students, but also provides meaningful active participation for all learning styles. A deep understanding of the characteristics of Generation Z further validates the design of this media. Generation Z, who grew up in a digital environment (digital natives), tend to prefer learning experiences that are inclusive, technology-integrated, and contextual (Chardonnens, 2025; Seemiller & Grace, 2019). Langsa Virtual Tour aligns perfectly with these preferences by providing a 360° interactive environment, locally-based content, and flexible engagement modes.

Conclusion

Based on the results of the research and development process using the 4-D model, it can be concluded that the Langsa Multicultural Heritage Virtual Tour is a feasible, practical, and effective media to strengthen students' global diversity character. Validation by material experts (86.6%), media experts (96.6%), teacher responses (95.5%), and student responses (93.3%) all fall into the "very feasible" category. The results of the effectiveness test also showed a significant increase in students' knowledge of global diversity, with a t-test result of 5.2 and a p-value < 0.05.

This virtual tour successfully integrates local multicultural heritage sites with interactive features that accommodate various learning styles of Generation Z and Alpha students, such as visual, auditory, and kinesthetic preferences. It also provides contextual learning resources that help students appreciate diversity based on local potential, which has previously been underutilized in Aceh's education context. Therefore, the Langsa Multicultural Heritage Virtual Tour can be an innovative solution to promote diversity literacy, enhance students' cognitive, affective, and psychomotor aspects related to global

diversity, and contribute to building tolerance and peace among future generations. This media can be further disseminated to other schools to expand its benefits and encourage similar developments that utilize local heritage as a source of character education.

Recommendation
Teachers are encouraged to integrate interactive media such as the *Langsa Multicultural Heritage Virtual Tour* to enhance students' global diversity literacy and foster tolerance, collaboration, and cultural appreciation. Future research should adopt more rigorous experimental designs, examine long-term impacts, and explore its adaptation across subjects and educational levels to broaden both theoretical and practical contributions.

Acknowledgment

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