

Validity test of digital learning content in social science education for junior high schools in Singaraja city

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Abstract

This research aims to analyse the needs for developing digital learning media in Social Sciences learning in junior high schools in Singaraja City. This study used qualitative research methods. The process of developing learning media must be carried out by testing construct validity and empirical validity. Material experts, media experts and language experts will carry out validity testing. The results of the analysis of social science education material experts assessed the validity score of the material to be 93, or the criteria "Very Valid". Likewise, the graphic design value is 90 or the "Very Valid" criteria. Meanwhile, the level of grammatical validity is 88 or the criteria "Very Valid". Based on the results obtained through expert testing in the media, material and language aspects, it can be concluded that the developed digital learning media is declared very valid, so it is suitable for use in the social science education learning process. The practicality test of digital learning media was assessed by two social science education groups and 24 students participating in social science education learning. The average score given by social science education teachers was 87.69, or Very Good criteria. Meanwhile, the practicality test assessment is based on assessing students taking social science education subjects with a score of = 79.48 or good criteria. These results show that the digital such as media developed can be used sustainably. This is because teachers and students assess that this digital learning media aligns with the needs of teachers and students.

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Introduction

The development of evaluation models, learning models, learning resources and digital learning media in Social Sciences learning in Junior High Schools in Singaraja City has not been carried out through an adequate validation process. Even Social Sciences learning media are taken from various sources relevant to the subjects taught by other teachers, without conducting validity and practicality tests of the learning media. This condition often causes learning media to become uninteresting, less relevant to the material, less relevant to students' needs and less understood by teachers and students as users of teaching media. Meanwhile, the development of learning media according to Heinich (2002) proposed an effective media development model consisting of six stages, namely: (1) analyse learner characteristics, (2) state objectives, (3) select, (4) utilise, (5) require learner response, (6) evaluate. These stages show how the process of developing learning resources for social science education is carried out so that they can be used according to the standards that must be met. The development of learning resources for social science education must also meet the needs of students, with an analysis of the problems that occur in understanding the material in the learning process of social science education.

Before creating learning media, teachers must analyse the important aspects considered in developing learning media, especially for students. Students as objects and objects of learning media development must be seen in their hobbies, abilities and psychological maturity (Karanjakwut & Sripicharn, 2023). According to Jarolimek (1963), the things that teachers should pay attention to in choosing learning media, namely: (1) the interactional objectives to be achieved, (2) the age and maturity level of children, (3) children's reading ability, (4) the level of difficulty and type of lesson concepts, and (5) the state/background of children's knowledge or experience.

This view focuses more on the objectives to be achieved and the characteristics of students as users of learning media. As the focus of learning objectives, students must be the mainstay in choosing learning media (Mangkhang et al., 2022). For this reason, it is necessary to pay attention to the level of cognitive development of students, the level of moral development of students and the social-individual characteristics of students. (Ochoa-Tataje et al., 2024). This is inseparable from developing learning media to facilitate students' learning of social science education material. Well-designed learning media can stimulate students' thoughts, feelings, attention and will, so that they can encourage activities in students (Kustiawan, 2016). In addition, learning media can convey messages or learning information with high reliability, namely, it can be repeated without experiencing changes in content. Related to that, choosing the right learning media is a skill that teachers must have (Nurrita, 2018). This process shows that the development of learning media must make learning objectives, materials, hobbies, cognitive development of students and moral development of students as the basis, so that the learning media developed can be optimally beneficial for students (Dwijayani, 2019; Sitompul & Siregar, 2020).

Before creating learning media, social science education teachers must analyse the material presented to students before creating learning media, determine the learning media that will be developed, prepare the tools used to develop the media, and create learning media according to the material. Suppose several views on the selection and creation of learning media above are used to make social science education learning media in Singaraja City. In that case, the stages that social science education teachers must pass are: (1) planning, (2) needs analysis, (3) development, (4) validation, and (5) evaluation. Validation of the developed learning media to ensure that the content of the learning media is relevant to the material, the design of the learning media is in accordance with the teacher's abilities and the needs of students, the language used in the learning media is in accordance with the cognitive and moral development of students, and in accordance with the needs of science, technology and art where the practice of learning Social science education is carried out (Campillo-Ferrer et al.,

2020; Serenelli et al., 2011). In this regard, this study will examine in depth and comprehensively the process of developing learning media in social science education learning at Junior High Schools in Singaraja City and conduct a validity test on the learning media developed.

Method

This study uses an educational research and development model. The development of educational products in this study is digital learning media in social science education learning at Junior High Schools in Singaraja City (Creswell, 2018; Gall et al., 2007). Learning media development begins with the planning, needs analysis, development, validation and evaluation stages. The population in this study consisted of teachers and students at junior high schools in Singaraja City, Bali Province. While the sample of this study was two lecturers who were experts in social science education material, two lecturers who were experts in learning media and 24 students at Junior High School 6 Singaraja. The data collection technique in this study was carried out using expert test sheets and student assessment questionnaires on digital learning media. The research instruments were in the form of expert test assessment sheets and digital learning media questionnaires. The data analysis technique used in this study is a quantitative descriptive data analysis technique, by calculating the average value and converting it into an assessment form to obtain the category of digital learning media developed (Miles et al., 2014).

The qualification of the validity of digital learning media in social science education learning can be presented in Table 1.

Table 1.

Level of Achievement

Achievement Level	Qualification	Information
90%-100%	Very Valid	Suitable for use without revision
75%-89%	Valid	Suitable for use with necessary revision
65%-74%	Quite	Suitable for use with many revisions
55%-64%	Poor	Not yet suitable for use and still has many revisions
0%-54%	Bad	Not suitable for use and must be completely revised

Sources: Creswell, 2018.

Results and Discussion

Development of Digital Learning Media in Social Science Education Learning at Junior High Schools in Singaraja City

The process of developing learning media in this study was carried out through the stages of planning, needs analysis, development, validation and evaluation. The stages of developing learning media for social science education at Junior High Schools in Singaraja City must consider the aspect of the urgency of the availability of learning media. According to Suastika & Widiastini (2020), several specifications that need to be considered in developing learning media are basic competencies, objectives, availability of sources, funds, workforce and facilities, flexibility, practicality and resilience, effectiveness, learning models, student conditions, time allocation and assessment. According to Pribadi (2011), an effective media usage planning model known as "ASSUREs" was proposed: *Analyse* learner characteristics, *State* objectives, *Select* or modify media, *Utilise*, require learner response, and *Evaluate*.

This model planning consists of six activities, *first*, analyse learner characteristics, meaning analysing the general characteristics of students based on gender, socio-cultural background, socio-economic status, and special characteristics of students as indicated by the knowledge, skills and initial attitudes.

Second, state the objective, meaning stating or formulating new learning objectives to be achieved by students after completing the learning process. *Third*, select, meaning choosing, sorting, modifying, designing and developing learning media in accordance with the learning materials of Junior High School Social Science education. If the learning media that is already available can realise learning outcomes, the media should be used to save time, energy and costs. In addition, it is also necessary to pay attention to whether the media that is developed can arouse students' interest, has information requirements, has good quality, provides opportunities for students to participate, has been proven effective if it has been tested, and prepares instructions for discussion or follow-up activities. If there are media components unsuitable for learning objectives or for the conditions of students, then the media must be modified. If it is impossible to modify, choose the third alternative, designing and developing new media. Of course, this activity is much more expensive in cost, time and energy. However, this activity allows for preparing fixed media in accordance with the learning achievements to be achieved.

Fourth, utilise, meaning to calculate the utility value of the selected learning media. After choosing the right media, preparation is needed on how to use it and how much time is needed. In addition to practising and training in using it, room preparation is also needed, such as the layout of student seating, the facilities needed, such as equipment, tables, electricity, layers and others must be prepared before presenting the learning media.

Fifth, require learner response, meaning the learning media we develop need input from students for their improvement. Teachers should encourage students to provide responses and feedback on the effectiveness of the teaching and learning process, especially the learning media used. Feedback from students can be used as a reference in developing learning media for social science education to be better and more effective, and *sixth*, evaluate, meaning the effectiveness of the learning media developed will be seen through the learning achievements realised by students after the learning takes place. In this activity, an evaluation was also carried out on the reliability of the learning media that had been developed by measuring the abilities of students (Campillo-Ferrer et al., 2020).

In line with Miaz et al. (2019), the development of learning media for Social science education in Junior High Schools in Singaraja City is carried out through the following stages: (1) planning, (2) needs analysis, (3) development, (4) validation, and (5) evaluation. The planning stage is the process of designing learning media by preparing the tools that will be used to create learning media, determining the form of learning media to be created, determining the appearance of the media and the purpose of creating learning media. At this stage, the teacher must ensure the teaching material for which learning media will be created and understand the form of learning media to be created. For example, the teacher will create learning media clippings for election material, so the teacher must prepare magazines, newspapers, books, calendars, cardboard, scissors, glue, and coloured pencils to provide edges for the clippings. Then the teacher will determine the form of the clippings to be made and the learning objectives to be achieved through the learning media clippings. In this process, the teacher has also designed the appearance of the learning media created, whether it is displayed directly on the board or will be displayed by providing effects of light.

The needs analysis stage, namely the process of conducting a literature study related to basic competencies, learning objectives, students' cognitive development, moral development, individual and social characteristics, and empirical data about the facilities and infrastructure owned by the school and teachers' ability. At this stage, teachers must ensure that the basic competencies and learning objectives are achieved and analyse what learning media are relevant to the basic competencies and learning objectives. Analysis is also carried out to understand elementary school students' cognitive and moral development and its relevance to the learning media used. This means that the relevant learning media are for the concrete operational cognitive and conventional moral development stages. Likewise, the analysis of students' personal and social characteristics is reviewed from the activities of students,

students' attitudes, culture of students, values adopted and their basic abilities in reading the learning media to be created.

The next activity is to conduct an empirical study of the facilities and infrastructure owned by the school, so that the media developed can be displayed in the classroom. For example, if a school does not have an LCD, teachers cannot make media that uses an LCD. Analysis of the ability of users (teachers) of learning media must also be carried out to ensure that the learning media created can be displayed well in the classroom. For example, teachers do not have adequate skills to use computers; the learning media used must not use computer aids. This needs analysis is very important to ensure that all components are in accordance with each other and are relevant to student needs and teacher abilities. The stage of designing learning media is making learning media according to the material. The things that are done are creating content that will be included in the learning media, adjusting the size and shape of the learning media, displaying and checking the appearance of the learning media and making modifications to ensure that the media developed is in accordance with the teaching material.

Creating content is the main thing that must be considered to ensure the suitability between the teaching material and the content of the learning media created. For example, the material is about general elections, so the media content must follow the election and build students' conceptions about the election. In addition to ensuring the content, this activity must also design the form of media and the appearance of the learning media being developed. For example, learning media that will be displayed in the form of moving images, the image's shape must be standing, not tilted or upside down, which causes the image to be funny. Likewise, with the appearance of learning media, the order and purpose of its appearance must be ensured. Suppose you want students to focus on democracy before the general election. In that case, the first media displayed, for example, is the community holding a demonstration or expressing opinions in public, followed by displaying images or videos of people casting their votes at a polling station. The appearance and form of the media will determine the success of students' learning outcomes in Junior High School Social science education.

The validation stage uses learning media created in Social science education learning in the classroom. At this stage, students will pay close attention to the learning media created by the teacher and provide various responses. There are appreciative student responses, active responses, negative responses, and apathetic responses. These student responses validate the learning media that have been developed. Suppose most students respond positively and are enthusiastic to be involved in the learning process. In that case, the learning media that have been developed have high validity. Likewise, if students give negative responses and are not motivated to be involved in the learning process, then the learning media that has been developed needs to be adjusted.

In using learning media, students must be involved in preparing, installing/displaying and tidying up the learning media. Students can even be allowed to provide comments related to the learning media used. So that students are involved in the planning, implementation and evaluation of the learning process that is carried out. The evaluation stage determines the success of the learning media developed based on the students' skills. The leading indicator of the success of learning media is the skills possessed by students after the learning process is carried out.

The best learning media is learning media that can develop students' optimal knowledge, attitudes and skills. Teachers use a learning evaluation model to assess the learning media developed during this process. If most students have adequate skills according to the learning objectives, the learning media developed are effective. Likewise, if most students' abilities are below the predetermined standards in achieving the set learning objectives, it can be said that the learning media developed are less effective. Even though the students' responses are favourable to the media developed, if most of their skills are below the set standards, the social science education learning media can be revised, as in the stages of developing learning media above (Nurrita, 2018).

The three activities for developing social science education learning media above are carried out before learning takes place, and the last two stages of activities are carried out during learning activities. The development of social science education learning media, as explained above, can be carried out using two methods, namely: (1) the method of developing learning media individually, and (2) the method of developing learning media in groups (teacher work groups). Learning media developed individually tend to be weaker, because they do not get adequate input from professional associations or fellow teachers.

However, teachers as developers of learning media have adequate knowledge and skills about the learning media developed and how to use them. The individual learning media development method will be excellent if accompanied by judges' test activities, focus group discussions and seminars. Judges' tests are carried out to test the validity of the content of the learning media developed. This judge's test is usually carried out by at least two experts, namely experts in the field of study (social science education) and learning media experts (educational technology).

Focus group discussions are intended to provide equal input from colleagues. In the focus group discussion process, discussions will be held about the media's content, the media's form, the media, the relevance of the media to basic competencies, learning objectives, student conditions and various things related to learning media. Input from colleagues is then used to improve the developed learning media. The last activity is to hold a seminar on the developed learning media to get the final feedback and, at the same time, disseminate the developed learning media (Kustiawan, 2016).

The method of developing learning media in groups has high communal legitimacy, because a teacher working group makes it. If the group work is practical, all members will be fully involved in providing ideas related to the learning media created. Input from all members and revisions that are carried out continuously make the developed learning media "perfect". The more "heads" involved, the better the learning media developed.

However, working on learning media in groups sometimes does not involve all teachers fully in the media creation process. Moreover, there are more than ten working groups to develop learning media. Only a few people are undoubtedly involved; the rest are just spectators. As a result, most teachers do not understand the learning media being developed and how to develop them. In line with the results of research by Suastika & Widiastini (2020), the learning implementation plan developed through teacher working groups (KKG) was not understood individually by all teachers. This group learning media development method will be excellent if it is carried out with individual work distribution activities, jigsaw activities (original group and expert group), and focus group discussions involving experts. Individual task distribution is carried out to ensure that all teachers are involved in creating learning media. Jigsaw activities (original group and expert group) are intended to share knowledge and skills in creating learning media for each group, so that all group members understand how to create and develop learning media.

Focus group discussions involving experts are intended to obtain rational and scientific input from colleagues and experts who understand the content and learning media. If this learning media development method has been adopted, problems related to teacher abilities, teacher involvement, and skills in using learning media will be resolved. So far, this condition has not received much attention from teachers, including teachers who carry out the social science education learning process (Fuchs et al., 2016; Miaz et al., 2019; Yogica, 2019).

Validity Test of Digital Learning Media in Social Science Education Learning in Junior High Schools in Singaraja City

A validity test is carried out to ensure that digital media in social science education learning can be used in the learning process (Miaz et al., 2019). The validity test in this context determines the extent to which the accuracy and precision of digital learning media in social science education learning are effective in carrying out their functions. The validity test of digital learning media content in social science education learning is carried out in two ways,

namely: (1) validity of the design of digital learning media content in social science education learning, and (2) validity of items or components of digital learning media content in social science education learning (Yogica, 2019). Design validation is carried out by experts, including material experts, media experts, and language experts. The expert validation test aims to determine the feasibility of the content and material of the digital learning media in the developed social science education learning (Yusup, 2018).

Social science education material experts carried out this material validity test, namely two lecturers from the PCE Study Program, Department of Law and Citizenship, Faculty of Law and Social Sciences, Ganesha University of Education. The aspects that will be assessed in the digital learning media in Social science education learning are the suitability between the material and the learning outcomes, the suitability of the material with the learning objectives, the media developed according to the title, the content of the learning media develops students' abilities in solving problems, develops students' abilities in developing social skills, and is relevant to the base learning project. The range of values given to digital learning media material indicators in social science education learning is 1 to 100. Based on the assessment carried out by the material experts, the validation of digital learning media experts in social science education learning is presented in Table 2.

Table 2.

Results of Material Expert Analysis

Components	Subject Matter Expert		Validation Average Value	Criteria
	Validator1	Validator 2		
Materials	91	95	93	Very valid

Sources: Research Data, 2024.

From the analysis of social science education material experts, the validity results from expert 1 were 91, and from expert 2 were 95. An average value of 93 was obtained, which was then used to provide meaning and decision-making from the calculation results that had been obtained. Then, the score can be interpreted with the range criteria to obtain the "Very Valid" criteria. After the social science education material expert test was carried out, a media or graphic design test was carried out to determine the feasibility of the design or appearance of digital learning media in the developed social science education learning. According to Yusup (2018), graphic design is a combination of text and images, numbers and graphics, photos and illustrations, which requires special thinking from someone to combine these elements to produce something unique, beneficial, and easy to remember. The graphic design validity test is intended to ensure that the design, shape, illustration, photo, writing and lines contained in the digital learning media in social science education learning are in accordance with graphic design ethics, especially related to the graphic design of digital learning media in social science education learning (Retnawati, 2018). Several aspects indicate the line design of digital learning media in social science education learning, namely media size, media cover design, and media content design. The aspects that will be assessed for graphic design in digital learning media in social science education learning are listed in Table 3.

Table 3.

Validity Grid of Graphic Design of Digital Learning Media in Social Science Education Learning

Components	Components Indicator	Number and Assessment Items
Graphic	Media size	The media developed is in accordance with the standards The size of the media developed is in accordance with the media content.
	Media cover design	The colour elements used on the media cover are interrelated with each other. The composition of the layout (title, logo, etc.) on the

Media size	media is in accordance with the media size.
	The cover design on the media is attractive.
	The separators between paragraphs are clear (there are spaces).
	The page numbers, sequence and placement are in accordance with the digital media layout pattern.
	The size of the image/source caption is complete.
	The use of letter variations (bold, italic, capital) on the media is not excessive.
	The shape of the color and size of the layout on the media is attractive, harmonious and proportional.

Sources: Research Data, 2024.

Two learning media experts from the Learning Technology Study Program conducted the graphic design test of digital learning media in social science education learning. The range of values given to the graphic design indicators of digital learning media in social science education learning is 1 to 100. Based on the assessment given by the media/graphic design experts of digital learning media in social science education learning, the following results were obtained in Table 4.

Table 4.
Results of Media Expert Analysis (Graphics)

Components	Subject Matter Expert		Validation Average Value	Criteria
	Validator 1	Validator 2		
Graphics	95	100	97	Graphics

Sources: Research Data, 2024.

From the graphic expert analysis results, the validity results from expert 1 were 92, and expert 2's were 90. An average value of 91 was obtained, which was then used to provide meaning and decision-making from the calculation results that had been obtained. Then, the score can be interpreted with the range criteria to obtain the "Very Valid" criteria. With the predicate very valid, the graphic design of digital learning media in social science education learning has met the requirements. It is suitable for learning social science in Junior High Schools in Buleleng Regency (Suwartono & Moningka, 2017).

After a language expert test was carried out to determine the use of grammar in digital learning media in social science education learning, which was developed. Grammar is a set of benchmarks in language structure. The language structure includes sound system, form system, word system, sentence system and meaning system. In other words, grammar includes the fields of phonology, morphology and syntax (Suharsono & Qomah, 2014). Related to that, digital learning media in social science education learning must also be tested for grammatical validity. The grid for the grammatical validity of digital learning media in social science education learning is presented in Table 5.

Table 5.
Grid of Grammatical Validity of Digital Learning Media in Social Science Education Learning

Components	Components Indicator	Number and Assessment Items
Language	Accuracy of sentence selection	Sentences used to explain the media are easy to understand. Sentences used do not create double meanings. Compliance with Indonesian language rules. Sentences and vocabulary used in the media already use simple vocabulary according to

the characteristics of students.

Sources: Research Data, 2024.

The grammar test of digital learning media in social science education learning was conducted by two language experts from the Indonesian Language Education Study Program. The range of values given to the grammar indicators of digital learning media in social science education learning is 1 to 100. Based on the assessment given by the language experts of digital learning media in social science education learning, the following results were in Table 6.

Table 6.

Language Expert Validity

Component s	Subject Matter Expert		Validation	Criteria
	Validator 1	Validator 2	Average Value	
Language	100	75	87	Language

Sources: Research Data, 2024.

From the analysis of language experts, the validity results from expert 1 were 86, and from expert 2 were 90. An average value of 88 was obtained, which was then used to provide meaning and decision-making from the calculation results that had been obtained. Then, the score can be interpreted with the range criteria to obtain the "Very Valid" criteria. This shows that from the linguistic aspect, digital learning media in learning social science education is suitable for use in learning social science education in Junior High Schools in Singaraja City. Based on the results obtained through expert tests in the aspects of media, material and language, it can be concluded that the digital learning media in learning Social science education that was developed was declared very valid, so it is suitable for use in carrying out the learning process of Social science education at the Junior High School level in Singaraja City (Ivanov et al., 2020)

Conclusion

Before using digital learning media in social science education learning, the content design of digital learning media in social science education learning was tested by material experts, media experts, and language experts. The results of the analysis of social science education material experts assessed the validity score of the material as 93, or the "Very Valid" criteria. Likewise, the graphic design value was 90 or the "Very Valid" criteria. The level of grammatical validity, with a value of 88, is the "Very Valid" criterion. Based on the results obtained through expert tests in the aspects of media, material and language, it can be concluded that the digital learning media in Social science education learning that was developed was declared very valid, so it is suitable for use in carrying out the learning process of Social science education at the Junior High School level in Singaraja City.

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