



# LEARNING MEDIA CONTENT INTERACTIVE VIDEO PRESENTATION ORIENTED CREATIVE PROBLEM SOLVING MODEL: A VALIDITY TEST

## APRENDIZAGEM DE CONTEÚDO DE MÍDIA APRESENTAÇÃO DE VÍDEO INTERATIVO MODELO DE RESOLUÇÃO DE PROBLEMAS CRIATIVO ORIENTADO: UM TESTE DE VALIDADE


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**Abstract:** *This study aims to obtain data on the feasibility or validation of digital interactive learning media oriented to Creative Problem Solving in Indonesia. The subjects involved in validating the content of interactive learning media oriented to the Creative Problem Solving model were 3 experts (1 informatics engineering education and 2 science education). The place for this research is SMPN 8 Bukittingi. The instrument used for data collection in this study was a questionnaire. The reason for using a questionnaire is because this instrument is easier to quantify later. The data used in this study are qualitative data and quantitative data. The qualitative data used is data related to aspects of content validation assessment of interactive learning media oriented to the Creative Problem-Solving model. Quantitative data in this study is data from assessment results through quantified questionnaires. From the results of the validity test, the results of the media aspect were 0.93, the material aspect was 0.95, then the Education Expert assessment aspect was 0.91. The test results can be translated as digital interactive learning video media oriented to the Creative Problem Solving model, which is very relevant to be developed because it has been tested in terms of media material and testing by Education Experts.*

**Keywords:** *Learning Media. Interactive Video Presentation. Validity Test. Creative Problem Solving*

**Resumo:** *Este estudo visa obter dados sobre a viabilidade ou validação de mídia digital interativa de aprendizagem orientada para a resolução criativa de problemas na Indonésia. Os sujeitos envolvidos na validação do conteúdo de mídias interativas de aprendizagem orientadas ao modelo Creative Problem Solving foram 3 especialistas (1 educação em engenharia informática e 2 educação em ciências). O local para esta pesquisa é SMPN 8 Bukittingi. O instrumento utilizado para a coleta de dados neste estudo foi um questionário. A razão para usar um questionário é porque este instrumento é mais fácil de quantificar posteriormente. Os dados utilizados neste estudo são dados qualitativos e dados quantitativos. Os dados qualitativos utilizados são dados relacionados a aspectos de avaliação de validação de conteúdo de mídias interativas de aprendizagem orientadas ao modelo Creative Problem-Solving. Os dados quantitativos neste estudo são os dados dos resultados da avaliação por meio de questionários quantificados. Dos resultados do teste de validade, os resultados do aspecto mídia foram 0,93, o aspecto material foi 0,95, então o aspecto de avaliação do Especialista em Educação foi 0,91. Os resultados do teste podem ser traduzidos como mídia de vídeo de aprendizagem interativa digital orientada para o modelo Creative Problem Solving, que é muito relevante para ser desenvolvido porque foi testado em termos de material de mídia e testes por especialistas em educação.*

**Palavras-chave:** *Mídia de Aprendizagem. Apresentação de Vídeo Interativo. Teste de Validade. Resolução Criativa de Problemas*



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**Introduction**

Natural Science subject in Junior High School contain material on human movement organ systems that are theoretical in nature (KUSWANTO, 2019), so we need a real picture that can be observed to explain the material. Research observations carried out at SMPN 8 Bukittinggi resulted in science learning data on human movement organs that cannot be carried out face-to-face due to the Covid 19 pandemic. Therefore, this material for human movement organs is a new experience for students. For example, experimental activities such as proving that bones contain lime using chicken bones (HARTOWIRYONO, 2018). The experiment made students understand why it is necessary to drink milk, it turns out that milk is good for providing bone calcium. Human muscles can contract, but when it exposed to a strong electric current can cause death. Students can relate concepts to everyday life and can improve student learning outcomes through experiments. Props for each discussion are available, especially for the material of human movement organs. Here, there are digital learning media in the form of digital interactive videos which include presentations and interactive slide explanations. The following media have been created.

**Figure 1.** Opening Video digital learning media of human movement organs



Source: Finding by authors.

**Figure 2.** Presenter describe head frame of human skeleton



Source: Finding by authors.

**Figure 3.** Video Focus on slide presentation



**Source:** Finding by authors.

Testing the feasibility of using this media needs to be carried out through evaluation, so that the resulting media is media that can be declared good and valid according to experts. This research focuses on testing the validity of digital interactive video learning media that have previously been designed and built. The purpose of this study is to determine the validity of interactive video digital learning media so that it is suitable for use in learning science subjects for human movement organs.

### **Interactive Video Media as a learning approach**

The media used has a position as a teacher’s tool in teaching. For example, graphics, films, slides, photos, and learning using computers. Its purpose is to capture, process, and reconstruct visual and verbal information. As a teaching aid, the media is expected to provide concrete experiences, learning motivation, enhancing student learning absorption and retention. In an important case, learning media is needed. Media.

This learning is in the form of interactive audio-visual. This interactive audiovisual is useful as an introduction/intermediary for the teacher’s message to the recipient of the message, namely the student. Audio-visual learning media are indispensable in the thoughts, feelings, concerns, interests, and motivation of students to learn so that the teaching and learning process can run smoothly. This interactive audio-visual learning can also be used to increase motivation and teaching and learning interactions. From this description, it can be said that learning using audio-visual computers is part of the learning method in schools that really helps students in improving learning activities. Learning with multimedia can be more effective, understanding social situations in depth and finding patterns. According to Taturan (TUTURAN Et Al., 2021), qualitative research is also called naturalistic research. With narrative research, the field situation will remain natural, natural, and there will be no action, regulation, or experimentation. Data are writings or notes about everything that is heard, seen, experienced, and even researchers can do during data collection and evaluation of these activities using only techniques, reading, and taking notes on existing journal documents, and then analyzing the use of media. audio-visual in learning short stories and clearly described. Therefore, according to the said contents, this research has been carried out with the obtain data on the feasibility or validation of digital interactive learning media oriented to Creative Problem Solving.

### **Methodology**

The degree to which a test is used to measure the spectrum of the essence to be measured is known as content validation (BOKRANTZ, SKOOGH, BERLIN, & STAHR, 2020). Valid content and valid sampling technique are two things that are very important and needed to obtain content

validation. Matters relating to whether the items reflect the measurement in the spectrum to be measured is something that is included in content validation. Sampling validity is concerned with how the suitability of a test sample reflects the total spectrum of its content. Content validity will play an important role in the achievement test. It is the experts who will determine a validation of the content. Based on the numbers obtained from the results of the content validity test, it can be said that this research approach is quantitative (WARDINA, JALINUS, & ASNUR, 2019). The validity test is used to obtain the level of validity and validity of an instrument or to test the accuracy between the data on the actual object and the data that the researcher collects. The results of content validity conducted by validators/experts on interactive learning media (NOVALIENDRY, DARMI, HENDRIYANI, NOR, & AZMAN, 2020) oriented to the Creative Problem-Solving model were analyzed using the Content Validity Index (CVI) approach. This approach calculates the percentage of items deemed relevant for each expert, and then takes the average of the percentages among the experts. The results of calculations and analysis using the Content Validity Index (CVI) approach will later be defined descriptively in the form of categorizing/classifying validity. (GORRIE, GOODALL, RUSH, & RAVENSCROFT, 2019) :  $0.80 < r_{xy} < 1.00$  : very high validity (very good),  $0.60 < r_{xy} < 0.80$  : high validity (good),  $0.40 < r_{xy} < 0.60$  : moderate validity (enough) ,  $0.20 < r_{xy} < 0.40$  : low validity (poor),  $0.00 < r_{xy} < 0.20$  : very low validity (poor), and then  $r_{xy} < 0.00$  : invalid.

The object of this research is an interactive video learning media oriented to the Creative Problem Solving model. The subjects involved in validating the content of interactive learning media oriented to the Creative Problem Solving model were 3 experts (1 informatics engineering education and 2 science education). The place for this research is SMPN 8 Bukittingi. The reason this research was carried out at SMPN 8 Bukittingi is because it considers the results of initial observations, namely: the conventional learning system in the form of lecture models and independent learning by students has been used has not been able to attract interest in learning some students (IBRAHIM, 2017) (SHELTON, WARREN, & ARCHAMBAULT, 2016). This is because the learning media used only help visualize and have not been able to involve students directly in the simulation process of the learning media. So it is deemed necessary to conduct research related to interactive learning media at SMPN 8 Bukittingi. The instrument used for data collection in this study was a questionnaire. The reason for using a questionnaire is because this instrument is easier to quantify later. The data used in this study are qualitative data and quantitative data. The qualitative data used is data related to aspects of content validation assessment (NURHAYATI, ASTUTI, RISTANTO, & MIARSYAH, 2020) (SARI, PRASETYO, & WIBOWO, 2017) of interactive learning media oriented to the Creative Problem-Solving model. Quantitative data in this study is data from assessment results through quantified questionnaires. The data analysis technique used in this study used quantitative descriptive analysis techniques.

## Results and discussion

Interactive learning media (KUHAIL & AQEL, 2020) the researcher adopted the experimental approach and recruited a sample of 82 6th grade EFL male learners. The researcher used 5 instruments to collect data: 1 oriented to the Creative Problem Solving model that has been designed, then validated by the validator. The content validity test of the interactive learning media oriented to the Creative Problem Solving model is divided into three main aspects. The three aspects are: (1) Expert validation based on the educational aspect, in this case it will be related to the orientation of this media to the Creative Problem Solving model which is combined with the learning curriculum of an educational unit; (2) Expert validation based on the material or content aspect, what is meant in the material aspect is how clear and representative the learning material content is based on the basic competencies that students want to achieve presented by this media. The interface design in question is the suitability of animation, coloring, sound, (RANUHARJA, GANEFRI, FAJRI, PRASETYA, & SAMala, 2021) which concerns the physical appearance of this interactive learning media oriented to the Creative Problem Solving model; (3) Validation of media experts based on aspects of technical quality, technical quality here means the procedure for using the program and matters relating to how users of this media interact with teachers and students in applying it. The

following is a research questionnaire grid based on learning media criteria:

**Table 1.** Learning Media Expert Questionnaire Grid

No	Indicator	Question Items (15 points)
1	Effectiveness	1
	Convenience	1
2	Suitability	6
	Completeness	3
	Communicative and Interactive	4

Source: Finding by authors.

**Table 2.** Material Expert Questionnaire Grid

No	Indicator	Question Items (15 points)
1	Suitability	4
	Completeness	6
	Convenience	3
	Clarity	2

Source: Finding by authors

**Table 3.** Grid of Trial Questionnaires to Education Experts

No	Indicator	Question Items (15 points)
1	Suitability	3 Items
2	Attractiveness	2 Items
3	Convenience	2 Items
4	Clarity	7 Items
5	Appearance	1 Item

Source: Finding by authors

Research questionnaire based on learning media criteria that have been distributed to three experts (SAMALA, FAJRI, RANUHARJA, & DARNI, 2020), then do the calculation of the validation of the results of the assessment by the validator. The analytical technique used to analyze the results by using Content Validity Index (CVI) approach. Content validity index (CVI) is one of the most widely used techniques in nursing research. This technique was developed by Martuza (White, 1978), an education specialist. However, CVI has had a lot of critics, and then Tonya (RUTHERFORD-HEMMING, 2015), in his research calculated two types of CVI. The first type involves the content validity of individual items (i-CVI) and the second involves the content validity of the overall scale (s-CVI).

**Table 4.** Expert Validation Results from the Media Aspect

Items	Media Expert 1	Media Expert 2	Media Expert 3	Amount of Approval	I-CVI
1	1	1	1	3	3/3 = 1.00
2	1	1	1	3	3/3 = 1.00
3	1	1	1	3	3/3 = 1.00
4	1	1	1	3	3/3 = 1.00
5	1	0	1	2	2/3 = 0.67
6	1	1	1	3	3/3 = 1.00
7	1	1	0	2	2/3 = 0.67
8	1	1	1	3	3/3 = 1.00

9	1	1	1	3	3/3 = 1.00
10	1	1	1	3	3/3 = 1.00
11	0	1	1	2	2/3 = 0.67
12	1	1	1	3	3/3 = 1.00
13	1	1	1	3	3/3 = 1.00
14	1	1	1	3	3/3 = 1.00
15	1	1	1	3	3/3 = 1.00
	14	14	14	Mean I-CIV	0.93
<b>Relevant proportion</b>	0.93	0.93	0.93		

**Source:** Finding by authors.

Based on the data from the validation test results in the form of a questionnaire instrument to three experts from the media aspect, they explained the results of Mean I-CVI, Item-level Content Validity Index averaged 0.93. The relevant proportion of the first expert or expert = 0.93, the relevant proportion of the second expert obtained on average = 0.93, the same result was obtained from the third expert the relevance proportion of 0.93. It can be interpreted that digital interactive video learning media has very high validity in terms of media aspects and can be used with minor revisions. Digital interactive video learning media technically uses media that are easy to understand and run by users

**Table 5.** Expert Validation Results from Material Aspects

Items	Material Expert 1	Material Expert 2	Material Expert 3	Amount of Approval	I-CVI
1	1	1	1	3	3/3 = 1.00
2	1	1	1	3	3/3 = 1.00
3	1	1	1	3	3/3 = 1.00
4	1	1	1	3	3/3 = 1.00
5	1	1	1	3	3/3 = 1.00
6	1	1	1	3	3/3 = 1.00
7	1	1	1	3	3/3 = 1.00
8	1	1	1	3	3/3 = 1.00
9	1	1	1	3	3/3 = 1.00
10	1	1	1	3	3/3 = 1.00
11	1	0	1	2	2/3 = 0.67
12	1	1	1	3	3/3 = 1.00
13	0	1	1	2	2/3 = 0.67
14	1	1	1	3	3/3 = 1.00
15	1	1	1	3	3/3 = 1.00
	14	14	15	Mean I-CVI	0.95
<b>Relevant proportion</b>	0.93	0.93	1.00		

**Source:** Finding by authors.

The data from the validation test results in the form of a questionnaire instrument to 3 experts resulted in a Mean I-CVI, Item-level Content Validity Index an average of 0.95. The relevant proportion of the first expert or expert = 0.93, the relevant proportion of the second expert obtained on average = 0.93, the same result was obtained from the third expert the full relevance proportion was 1.00. It can be interpreted that digital interactive video learning media has very high validity in terms of media aspects and can be used with minor revisions. Digital interactive video (KAMAL

AFIFY, 2020) learning media is appropriate to represent the material for the motion system of the human body.

**Table 6.** Expert Validation Results from the Education Aspect

Items	Education Expert 1	Education Expert 2	Education Expert 3	Amount of Approval	I-CVI
1	1	1	1	3	3/3 = 1.00
2	1	1	1	3	3/3 = 1.00
3	1	0	1	2	2/3 = 0.67
4	1	1	1	3	3/3 = 1.00
5	1	1	1	3	3/3 = 1.00
6	0	1	1	2	2/3 = 0.67
7	1	1	1	3	3/3 = 1.00
8	1	1	1	3	3/3 = 1.00
9	1	1	1	3	3/3 = 1.00
10	0	1	1	2	2/3 = 0.67
11	1	1	1	3	3/3 = 1.00
12	1	1	1	3	3/3 = 1.00
13	1	1	1	3	3/3 = 1.00
14	0	1	1	2	2/3 = 0.67
15	1	1	1	3	3/3 = 1.00
	12	14	15	Mean I-CVI	0.91
Relevant proportion	0.8	0.93	1.00		

**Source:** Finding by authors.

The results of expert validation from the educational aspect were assessed by three experts in which some of the criteria were represented by 15 instrument items, showing Mean I\_CVI, item-level content validity index on average = 0.87, then the average proportion assessed as relevant from the first expert = 0.90, second expert = 1.00, and third expert = 0.80. This means that interactive learning media oriented to the Creative Problem Solving model has very high validity in terms of educational aspects and can be used with minor revisions. Based on the expert validation above, the interactive learning media oriented to the Creative Problem Solving model can educate students in its delivery so as to increase the results of students' understanding of the organs of human body movement.

Based on the results of expert validation which shows several user reactions, namely; users feel happy in using the media; Users do not feel bored in using the media and; Users are motivated to learn science in the field of human movement organs after using the media. The security aspect of this program can be described as follows based on expert validation results; the video cannot be changed by the user; the program does not contain negative elements, but the completeness of the recording feature and adding animative slides is still considered inadequate, so there are several revisions to the technical quality of this media so that users get satisfaction in terms of program security.

## Conclusion

Testing the validity of the content of interactive learning media oriented to the Creative Problem Solving model in this study was carried out on three main aspects (media aspects, material aspects, educational aspects). Several criteria from the media aspect represented by 15 items on the instrument for the calculation of validity and validated by 3 validates showed



an average item-level content validity index of 0.93. This means that interactive learning media oriented to the Creative Problem Solving model is very relevant to be developed for use in terms of material aspects, whether it is assessed in terms of learning, curriculum, material content, interaction, feedback and error handling. Fifteen items on the instrument for the calculation of validity representing several criteria on the aspect of the program display which were validated by 3 validators showed an average item-level Content Validity Index of 0.95. Based on the average value of the item-level content validity index, it indicates that interactive video learning media oriented to the Creative Problem Solving model is very relevant to be developed in terms of its use in terms of program appearance, whether it is assessed in terms of coloring, use of words and language, on-screen display, graphics, animations, sounds, menu commands and display designs. Ten items were also compiled to represent several criteria on technical quality aspects which were validated by 3 validators. Based on the average value of the item-level content validity index from the results of the calculation of the validity test which is 0.91, it shows that interactive learning media oriented to the Creative Problem Solving model is relevant to be developed in terms of technical quality aspects, both assessed in terms of educative delivery and the display of moving images that educating students is considered relevant. The results of the overall content validity show that the interactive digital video learning media oriented to the Creative Problem Solving model is relevant to develop its use, but there are some minor revisions that must be made for the perfection and satisfaction of responses from users of this media. The suggestion that the author gives in this study is that further trials are needed for the development of this learning media in order to get more optimal results. There needs to be a follow-up by further researchers so that in the development of learning media a security completeness is built on the media for the convenience of users. Based on the tests that have been carried out by expert validation from 4 aspects.

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