

## THE ADVANCE OF AUDIOVISUAL LEARNING MEDIA FOR CHILDREN DEVELOPMENT EXAMINATION BY USING PRE SCREENING DEVELOPMENTAL QUESTIONNAIRE FOR MIDWIFERY STUDENTS

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### ABSTRACT

The number of children under five years in Indonesia is approximately 10 percent from the overall population; therefore it needs serious attention to improve the quality of their development as these children will become the next generation of the nation. The examination of child development by using Pre-screening developmental questionnaire (Kuesioner Pre Screening Perkembangan (KPSP) is one of the competences of the midwives to improve the quality of student learning outcomes, teachers should provide creative and interesting learning sources which are easily understood by the students. The video is one of the learning media considered more effective to use because it stimulates sight, hearing, and kinesthetic (movement) at one time (at a time). Further, it enables open discussion among students and facilitators. This research aimed to produce a product of audio-visual learning media or video material used in child examination by using KPSP. The type of research undertaken is product-oriented research and development. Research is conducted by involving the product design stage, product making and development, and product evaluation. The research findings are (1) the audiovisual media or learning video used for teaching child development by using KPSP, (2) material experts, media experts, education experts, and students state that video as the learning media to explain child development by using KPSP is considered feasible. Audio-visual media of children's developmental examination materials using KPSP can be used as an alternative learning media to improve students' motivation and creativity in improving child's developmental examination skills.

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### INTRODUCTION

Early detection for growth and development of children is an activity or examination to find the signs for deviation of growth and development in toddler and pre-

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school children. The early detection on the child development problems enables the health workers to perform an intervention and develop appropriate action plans, especially when it involves the mother or family. If the health workers do not detect the deviation early, it would be more difficult to undergo intervention which eventually affects the child's growth and development.<sup>1</sup>

The number of children under five years in Indonesia is approximately 10 percent from the overall population; therefore it needs serious attention to improve the quality of their development as these children will become the next generation of the nation. This includes getting good nutrition, adequate stimulation and affordable and qualified health services covering detection and early intervention on the growth disorder. The development of children's development was in a comprehensive and quality that is carried out through the activities of stimulation and detection. The early intervention of growth disorder is conducted during the critical period of childhood. Early detection of growth disorder means to screen or detect early on the possibility of growth disorder as well as provide a follow-up on the parents' complaint related to the children development. Early detection of growth disorder on children is conducted at all service levels which is usually initiated at the level Public Health Centers. This involves doctors, midwives, and nurses. The tools used are Pre-Screening Developmental Questionnaire (KPSP), Visual Test (TDL), and Hearing Test (TDD).

The examination of child development using KPSP is one of the skills that midwives should master. The purpose of screening or examination of child development using KPSP is to know whether the children have normal growth or distorted growth. Technology in education is absolutely necessary due to rapid development. Technology can be used to facilitate the learning process applied in the making of learning media. Educators have a responsibility to help learners learn more easily and directed. Therefore, learners have the ability to improve learning resources. To improve the quality of student learning outcomes, it is necessary to have creative, interesting, and easily understood learning resources for students. Less interesting learning activities result in less optimal learning outcomes. In this case, the role of a lecturer as a science developer is very essential to choose and implement appropriate and efficient learning for learners.<sup>2</sup>

One of the resources that can be utilized in learning activities is video as the audiovisual media. The video is a medium to foster the implementation of self-learning. Video as learning media is more effective because it stimulates sight, hearing, and kinesthetic (movement) at a time, as well as facilitates discussion among students and facilitators. This opinion is strengthened by the research of Munjidah<sup>3</sup> in which she states that the students who use audiovisual media have better learning outcomes than those who only use visual media.

Research on the development of video as learning media has been carried out for delivering the material on vital signs check material.<sup>4</sup> Using video as learning media about the examination of children development by using KPSP has been conducted Indonesia, however, this material was not presented in an in-detailed explanation since it only consisted of the procedures without giving introduction and evaluation. Department of Midwifery, Health Polytechnic Ministry of Health Yogyakarta as the institution which provides DIII Midwifery and D IV Midwifery has not had a video as a learning material to improve student skills on how to examine child development. Therefore, the researcher is interested in developing a video as the learning media for the students about the examination of child development using Pre-Screening Developmental Questionnaire

(KPSP). This research aims to produce a product of audio-visual learning media or video material of child examination by using KPSP.

## **METHOD**

This research using with Research & Development study design. The development undergone during this research is the development of audiovisual learning resources in the form of video containing the material of child development examination by using Pre-Screening Developmental Questionnaire (KPSP) for midwifery students. The sampling technique which used was a purposive random sampling of 102 respondents from the second-semester students of Diploma Program of Midwifery Respati University Yogyakarta (UNRIYO) were selected as sample. One-on-one testing 4 students, small group trials 18 students and large group trials as well as comparison groups with conventional learning media, video group 40 students and conventional group 40 students. Data were collected using the questionnaire for material experts, educational experts, media experts, and students of the Midwifery Program of UNRIYO.

The development procedures involve designing, constructing, and evaluating. This research uses the adaptation measures by Borg & Gall. The steps are complemented by several development models proposed by Luther, Criswell and adopted according to Sadimanet.al.<sup>5,6</sup> These steps are explained as follows: (1) the first step is to design the product, including the identification of needs or problems, determining learning materials, and data collection; (2) the second step is to make and develop product, including the collection of materials and making flowchart view, (3) product evaluation aiming to obtain data in order to revise the product. This stage involves material experts, educational experts, media experts, and students of the Midwifery Program of UNRIYO who have not received learning materials on child development examination by using the Pre-Screening Developmental Questionnaire (KPSP) as one-on-one testing, small group trials and large group trials as well as comparison groups with conventional learning media, (4) final outcome is the video as the media to teach Neonatal, Baby, Toddler and Child Pre-School Care focusing on child development by using Pre-Screening Developmental Questionnaire (KPSP).

## **RESEARCH FINDINGS**

Development of learning resources is conducted through several processes such as validation and testing. Testing on the learning source is undertaken after the validation process. In this research, material validation involves lecturers as the material experts, media validation with media experts, and media validation with educational experts. The next step is a testing process which involves midwifery students of the second semester. This process is useful to ensure the feasibility of the product in the learning activity.

### **The feasibility of the product based on the validation from the material expert.**

Material experts who became the validators in this research are the lecturers of Neonatal Cares, Infant, Toddler and Pre School Children who have expertise in learning materials. Validation is conducted to obtain accurate inputs which will be used to revise the developed product. The data in this research are obtained by giving the product in the form of learning video about the examination of children development by using Pre Screening Developmental Questionnaire (KPSP) together with a validation sheet for material experts in the form of the questionnaire. The questionnaire has several aspects that need to be validated. The following aspects are validated by the material experts: the quality of learning materials and the content/learning materials, comments and

suggestions in general and conclusions on learning resources developed. The assessment process is done by filling out the evaluation sheet that has been included during the validation process.

Table 1. The Quality of Learning Material based on The Validation From The Material Experts

No	Assessment Aspects	The Material Experts	
		Stage I	Stage II
1	The Quality of Learning Material	92%	100%
2	Content	96%	100%
	Mean Score	94%	100%
	Category	Excellent	Excellent

The results of the evaluation by the material experts regarding the learning resources show that some material aspects should be revised. The order of the material should be revised. Based on the validation in Stage I and Stage II on the learning resources, the researcher can obtain the data to be analyzed and used as a reference for the revision. Data obtained from two aspects, namely the quality of learning materials and content/material aspects. Data obtained through questionnaire consists of two aspects, namely the quality of learning materials and content/material aspects. The questionnaire about the quality aspect of the learning materials consists of ten items, and the questionnaire on the content/material aspect consists of ten items.

#### The feasibility of the product based on the validation from the media expert

Validation is conducted to obtain accurate inputs which will be used to revise the developed product. The data in this research are obtained by giving the product in the form of learning video about the examination of children development by using Pre Screening Developmental Questionnaire (KPSP) together with a validation sheet for material experts in the form of the questionnaire. The questionnaire has several aspects that need to be validated. The following aspects are validated by the material experts: visual aspect, programming aspect, comments and suggestions in general and conclusion. The evaluation result is explained as follows:

Table 2. The feasibility of the product based on the validation from the media expert

No	Assessment Aspects	The Material Experts	
		Stage I	Stage II
1	Display Aspect	56,9%	78,5%
2	Programming Aspect	50%	80%
	Mean Score	53,45%	79,5%
	Category	Excellent	Excellent

The results of the evaluation by media experts from these learning sources show that revision must be done related to media aspect. Some suggestions include: 1) the video duration is too long and monotonous, so the use of writing can be reduced 2) music can be used not only at the beginning and at the end, but also in some parts of the video. Based on validation in stage I and stage II by media experts on the developed learning source, the researcher can obtain data to be analyzed and used as a reference for revision. Data obtained through a questionnaire consisting of two aspects, namely display aspect and programming aspect. The display aspect consists of thirteen items, and programming aspect consists of four items on the quality assessment questionnaire.

**The feasibility of the product based on the validation from the education expert**

Education experts who became the validators in this research are the lecturers of Universitas Negeri Yogyakarta (UNY) who have expertise in learning materials. Validation is conducted to obtain accurate inputs which will be used to revise the developed product. The data in this research are obtained by giving the product in the form of learning video about the examination of children development by using Pre Screening Developmental Questionnaire (KPSP) together with a validation sheet for education experts in the form of the questionnaire. The questionnaire has several aspects that need to be validated. The following aspects are validated by the education experts: the quality of learning materials and the content/learning materials, comments and suggestions in general and conclusions on learning resources developed. The assessment process is done by filling out the evaluation sheet that has been included during the validation process.

Table 3. The feasibility of the product based on the validation from the education expert

No	Assessment Aspects	Educational Expert
1	The Quality of Learning Material	82%
2	Content	94%
	Mean Score	88%
	Category	Excellent

The results of the evaluation by education experts related to these learning sources show that revision must be done related to the material aspect. Some suggestions include 1) the writing and sentence structure must be correct, 2) the presentation of the material needs to be communicative and interactive, 3) the summary component needs to be added, 4) the instructional principles have been implemented. Based on validation by education experts on the developed learning source, the researcher can obtain data to be analyzed and used as a reference for revision. Data are gained from the questionnaire covering two aspects, namely the quality of learning material and content aspects. The quality of learning material aspect consists of ten items, and content aspects consist of ten items on the quality assessment questionnaire.

**One-on-one Test, Small Group, and Large Group**

The tests carried out in three stages: one-on-one, small group, and large group. One-on-one testis conducted for four students whom the researcher give a questionnaire just as the materials experts, media experts, and educational experts. The one-on-one test involves the second-semester students of Diploma Program of Midwifery UNRIYO. The purpose of a one-on-one test is to discover and identify the quality of learning video products on child development examination by using Pre-Screening Developmental Questionnaire (KPSP). The test is implemented in the multimedia classroom. Then the researchers give a questionnaire to determine the quality of learning videos. Before the participants fill the questionnaire, researchers first present the learning resources. After that, all students are welcome to give scores on aspects in the questionnaire. After all the students have completed the questionnaire, they can write any suggestions and comments of students on the developed learning source on the questionnaire. Data obtained through questionnaires in the test can be seen in Table 4 below.

Table 4. The Quality of Learning Resources on Three Stages of Tests

Assessment Aspects	Mean Score	Mean Percentage	Mean	Category
One-on-one Test			85,4%	Strongly Agree

Assessment Aspects	Mean Score	Mean Percentage	Mean	Category
Display Aspect	29,8	85%		
Content Aspect	29,8	85%		
Media Presentation Aspect	38,8	86,1%		
<b>Small Group Test</b>				
Display Aspect	29,9	85,4%	87,3%	Strongly Agree
Content Aspect	29,8	85,2%		
Media Presentation Aspect	41,1	91,2%		
<b>Large Group Test</b>				
Display Aspect	29	82,9%	83,9%	Strongly Agree
Content Aspect	29,1	83,2%		
Media Presentation Aspect	38,5	85,5%		

Data are obtained from a one-on-one test which has similar characteristic to potential product users. The data cover the quality of learning resources including display aspect, content/material aspect, and media presentation aspect. Data enable the researcher to know the assessment of student about the quality of learning source. In addition, qualitative data are obtained in the form of suggestions and inputs as material for revision of learning resources products. The test was followed by four students who have never taken the course on neonatal care, infants, toddlers, and pre-school children.

A small group test was given to 18 students whom the researchers give a questionnaire just as the materials experts, media experts, and educational experts. The participants are the second-semester students of Diploma Program of Midwifery UNRIYO. The purpose of small group test is to know and identify the quality of this learning video product in a small group. The test is done in the multimedia classroom. The researcher gives a questionnaire to determine the quality of video learning resources. Before the participants fill the questionnaire, researchers first present the learning resources. After that, all students are welcome to give scores on aspects in the questionnaire. After all the students have completed the questionnaire, they can write any suggestions and comments of students on the developed learning source on the questionnaire.

Data are obtained from a small group test which has similar characteristic to potential product users. The data cover the quality of learning resources including display aspect, content/material aspect, and media presentation aspect. Data enable the researcher to know the assessment of student about the quality of learning source. In addition, qualitative data are obtained in the form of suggestions and inputs as material for revision of learning resources products. The test was followed by 18 students who have never taken the course on neonatal care, infants, toddlers, and pre-school children.

A large group test was given to 40 students whom the researchers give a questionnaire just as the materials experts, media experts, and educational experts. The participants are the second-semester students of Diploma Program of Midwifery UNRIYO. The purpose of small group test is to know and identify the quality of this learning video product in a small group. The test is done in the multimedia classroom. The researcher gives a questionnaire to determine the quality of video learning resources. Before the participants fill the questionnaire, researchers first present the learning resources. After that, all students are welcome to give scores on aspects in the questionnaire. After all the students have completed the questionnaire, they can write any suggestions and comments of students on the developed learning source on the questionnaire.

Data are obtained from a large group test which has similar characteristic to potential product users. The data cover the quality of learning resources including display aspect, content/material aspect, and media presentation aspect. Data enable the researcher to know the assessment of student about the quality of learning source. In addition, qualitative data are obtained in the form of suggestions and inputs as material for revision of learning resources products. The test was followed by 40 students who have never taken the course on neonatal care, infants, toddlers, and pre-school children.

### Data of knowledge differences between video learning groups and conventional learning groups

The result of calculation of normality test of knowledge in the study group with video is p-value 0,211 (p-value > 0,05), so data distribution is normal. While the normality test in the conventional learning group produces p-value 0,279 (p-value > 0,05) meaning that the distribution data is normal.

Table 5. Knowledge differences between video learning groups and conventional learning groups

Learning Group	Mean	SD	SE	p-value	N
Video	70,38	13,3	2,11	0,672	40
Conventional	71,53	11,1	1,77		40

The average knowledge of the video learning group is 70.38 with a standard deviation of 13.3. Meanwhile, the average knowledge of the conventional learning group the average knowledge is 71.53 with a standard deviation of 11.1. The result of the statistic test is  $p = 0,672$ , meaning that at alpha 5% there is no significant difference of knowledge average between video learning group and conventional learning group.

## DISCUSSION

This research applies a method developed by Sadiman, et al because the steps of his research are very suitable to create a product as the learning resources. These procedural steps are: 1) identification of needs and problems, 2) development of learning design, 3) developing video as learning media, 4) product evaluation, 5) outcome is the video about children development examination using Pre-Screening Developmental Questionnaire (KPSP) for midwifery students. The final outcome is the video as the learning resource to study the examination of child development by using Pre-Screening Developmental Questionnaire (KPSP). This video can be used by students as independent learning resources.

The first step is to identify the needs or problems. Competence in carrying out child development examination by using Pre-Screening Developmental Questionnaire (KPSP) is very crucial for midwifery students. It is quite difficult to provide real experience before students conduct real practice in the real setting, so it leads to less optimum learning. Therefore the learning media is one of the solutions to overcome the problem. The learning resources consist of child development materials, child development examination by using the Pre-Screening Developmental Questionnaire (KPSP). The learning resources explain the purposes of the examination of children by using KPSP, the definition of growth and development, the characteristics of child growth, the principle of child development, aspects of child development, how to conduct child development examination by using KPSP.

The second step is the development of learning design. The researcher chooses the material because it is suitable with the existing problems and the competence of midwives.

The third step is to develop a video as media learning. The researcher takes data or materials from the book "Guidelines for the Implementation of Stimulation, Detection and Early Intervention of Growth of Children at Basic Health Service Level". In developing this video, researchers develop the material based on the syllabus of Neonatal Care, Infants, Toddlers, and Pre-School Children. The next step is the flowchart and script writing. Flowchart contains the design of the product made and the contents of the manuscript are the material of child development examination and the evaluation.

The fourth step is product evaluation. In making the video as the learning media, the researchers get help from Rhomi, SSnthe alumni from Indonesia Art Institute. The next step is product validation. Before the product is introduced to the student, it needs to be validated by the experts. The material in this learning resource is validated by the material experts namely, Ms Tri Maryani, SST, M. Kes; the media is validated by the alumni of Indonesia Art Institute, M. Imam Hariyono, SSn; and for the learning process is validated by Dr. Christina Ismaniati, M.Pd. In the validation process, there are many suggestions given to improve the quality of this learning resource. The material expert gives a 100% rating with the category "Excellent". An expert in media gives a 79,5% rating with the category of 'Good'. An educational expert provides an assessment of 88% with the category of " Excellent ". After being revised, this learning resource can be declared valid and can be presented to students. At this stage, the researchers also develops an instrument in the form of validation sheet which will be used as the main instrument to assess the quality of learning resources after the initial design phase.

The fifth step is a one-on-one trial involving 4 students, small group trials consisting of 18 students, and large group trials consisting of 40 students. Assessment is conducted to know the students' appraisal of the learning resources being developed and to improve the quality of learning resources based on suggestions and inputs from students. The results of the students' assessment on one-on-one trial get an assessment of 85.4% with the category "Strongly Agree". The result of the students' evaluation of small group trial gets an assessment of 87.3% with the category "Strongly Agree". The results of the students' assessment on large group trial get an assessment of 83.9% with the category "Strongly Agree". It can be concluded that the research has produced a video as a learning product about the examination of child development using Pre-Screening Developmental Questionnaire (KPSP) which can improve knowledge and be well-received by midwifery students. A good video as learning media can improve the motivation of students, so that learning videos should pay attention to the characteristics and criteria, such as clarity, simple language, easy to understand, content representation, visualization with media, and can be used by class or individual.<sup>7</sup>

The statistical test results show that there is no significant difference in the average knowledge of video learning groups and conventional learning groups. Students' knowledge on child development examination by using KPSP who study with video is similar to those who study from conventional learning. This video can be used as an alternative learning resource that can be used in class or individually. The advantage of the video as this research's product includes a rich source of non-printed learning material which can be used by students and can be repeated at any time and anywhere based on the needs of students. The disadvantage of this learning resource is that the students need a computer/laptop /handphone to play the video. Knowledge in the video group is

similar to the conventional learning group because the students only have one opportunity to play video for 1 hour 8 minutes 6 seconds.

## CONCLUSION

Based on the research that has been conducted, the product in the form of the video as the learning material about child development examination by using KPSP has been feasible to be used. In addition, the results of the assessment of learning resources are as follows:

1. According to the material expert, the assessment of the quality aspect of learning materials and content aspect get a score of 100% and classified in the category of "Excellent".
2. According to the media expert, the display aspect and programming aspect get a score of 79.5% and include in the category of "Good".
3. According to educational experts, the aspects of learning materials and the aspect of content get a score of 88% and include in the category of "Excellent".
4. From one-on-one test results, the aspect of the display, content/material aspect, an aspect of media presentation gets a score of 85.4% and include in the category of "Strongly Agree".
5. The results of small group trial show that the aspect of the display, content/material aspect, an aspect of media presentation gets a score of 87.3% and are classified into the category of "Strongly Agree".
6. From one-on-one test results, the aspects of the display, content/material aspects and aspects of media presentation get a score of 83.9% and are classified into the category of "Strongly Agree".
7. There is no significant difference in average knowledge between video learning group and conventional learning group. The average knowledge in the video learning group is 70.4 and the conventional learning group is 71.5.

## SUGGESTION

Based on these conclusions, the suggestions can be given as follows: 1) the product of this learning resource can be used and utilized by the students in the subject of neonatal care, infant, toddler and pre-school with the assistance from lecturers/instructors/facilitators, 2) it is crucial to provide other sources of learning products with materials which are suitable with the achievements of student learning in order to help students to learn.

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