Development of Video Multimedia Operational Instruction on Industrial Sewing Machine

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Abstract—Based on the preliminary studies on subjects studied this research review of multimedia instructional videos industrial sewing machine operation. This study aims to identify learning materials, create a multimedia design instructional videos, perform and analyze s the results of validation. The right method for this study is the method of R & D (Research and Development) approach. This study was conducted in the Education Studies Program of Welfare Dressmaking Family Welfare Department of Education Faculty of Technical Education and Vocational Education University of Indonesia. The study of population is learning materials expert and multimedia experts. Results of the validation by experts of material to get an average value of 94.2% percentage feasibility, by multimedia experts earn an average percentage of 80.6%. The Summoning Test based on a feasibility standard of developing multimedia instructional videos industrial sewing machine operation to fall into the category fit for use.

Keywords— multimedia operational instructional; industrial sewing machine

I. INTRODUCTION

Learning media is one component of learning that can support the success of the learning process. Learning media can help teachers in the process of delivering material in teaching and learning activities so that students will more easily understand the material presented. The use of learning media continues to grow along with the development of technology ranging from simple media to the use of multimedia which is a combination of two or more types of media. Multimedia video is one type of media created by narration, animation or recording of an activity that shows the stages of the work process. Video is a series of motion pictures accompanied by a sound that forms a unit that is strung together into a plot with the messages in it for the achievement of learning goals stored with the storage process on tape or disk media [1,2].

Learning multimedia videos can provide real illustrations on learning, especially in explaining a stage or process. Parts of a process can be fully presented, so students can easily observe and learn the steps of the process. Learning multimedia videos have several advantages like: (1) giving messages that can be received more equitably by students, (2) very good for explaining a process, (3) overcoming the limitations of space and time, (4) more realistic, repeatable and terminated according to need, (5) giving a deep impression that can affect students’ attitudes [2].

Learning multimedia videos are appropriate for practical learning. One of them was in learning at the Fashion Design Education Study Program. Fashion Design Education Study Program is a study program that provides theoretical and practical experience to students in the field of clothing. In courses related to the practice of making clothing, it is necessary to use instructional video media because it explains the steps in making clothes. One of the subjects in the Fashion Design Education Study Program was delivered theoretically and practically, namely the Sewing Tools course.

In this course, various types of sewing machines are studied. One of them is an industrial sewing machine (high speed). According to Prihati "Industrial sewing machines are sewing machines run dynamo that have high speed” [3]. This sewing machine is usually in the fashion-making industry such as garments because it will speed up the work process because in a short time it can produce large quantities of products.

The ability to operate industrial sewing machines (high speed) needs to be studied because this sewing machine has high speed in sewing. This can be learned by paying attention to the stages ¬ -stages in the process of operating this sewing machine. The first stage of operation of this sewing machine is the first preparation stage which must be considered starting from the work clothes worn, adjusting the sitting position and the right body and the correct position of the industrial sewing machine control then inserting the plug to start the engine and how to press the On / Off switch and step second, the installation of needles and machine shoes, filling the spool, inserting a spool into the lifeboat, installing a lifeboat in the lifeboat, installing the upper thread on the machine, removing the lower thread on the machine, adjusting the stitch length and adjusting the thread tension, the machine is ready to operate.

The results of the preliminary study conducted by the author on the Tool Kit Sewing media used are in the form of power points through infocus / LCD, therefore it is necessary to develop the media in the course of Sewing Tools. The author is interested in making multimedia video learning the operation of industrial sewing machines (high speed) to provide convenience to lecturers and make it easier for students to

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understand the learning of industrial sewing machine operations.

The description of the background above becomes the rationale for writing a research about "Developing the Video Multimedia Operational Instruction on Industrial Sewing Machines". The use of multimedia video technology can be an alternative to overcome student learning problems, so as to improve the quality of student learning outcomes in the operation of industrial sewing machines.

II. METHOD

The research method is the method used in a study to achieve the objectives that have been formulated. This study uses quantitative research with a model of research and development (Research and development / R & D). According to Sugiyono state that "Research and development methods or in English, research and development are research methods used to produce certain products, and test the effectiveness of these products" [4].

Stages in the research and development method have been adapted to research on the development of multimedia video learning the operation of industrial sewing machines, starting from the design stage, production and development stages, validation stage, revision stage, and assessment stage.

III. RESULTS AND DISCUSSION

The results of the research and development of multimedia learning videos on the operation of industrial sewing machines that have been carried out can be described at each stage of multimedia video development as follows:

The stage of identification of industrial sewing machine operating materials that will be applied in the development of multimedia learning the operation of industrial sewing machines namely material regarding the definition of industrial sewing machines, introduction of industrial sewing machine parts, introduction of industrial sewing machine parts, first and second preparation stages in the operation of sewing machines industry to the stage of practicing the operation of industrial sewing machines. Based on preliminary studies on Sewing Tools courses in learning the operation of industrial sewing machines that the learning media used are less supportive in the learning process because learning information cannot be understood by the whole student. The material for operating industrial sewing machines is a practical course so that students need learning media that can provide real illustrations on the learning of industrial sewing machine operations. One type of multimedia learning that can provide real illustrations that are used to convey information in the form of audio-visual motion is video. Video is a series of motion pictures accompanied by a sound that forms a unit that is strung together into a plot with the messages in it for the achievement of learning goals stored with the storage process on tape or disk media [2].

Based on the identification above, the multimedia learning video is right to be used for practical learning in the Sewing Tool course, especially in learning the operation of industrial sewing machines because it can provide more equitable learning information to students, more interesting and effective in the learning process.

The stage of making a multimedia design for learning video on the operation of industrial sewing machines based on the problems and results of these observations, then multimedia videos are developed according to the material of industrial sewing machine operation. According to Munir argued that "multimedia development methodology consists of 6 stages, namely: concept, design, material collection, manufacture, test, and distribution" [5]. There are several elements that must be made at the concept / design stage, namely flowchart, storyboard and narrative. The developed multimedia is made in video form in order to facilitate students in following the learning process. Furthermore, the stages of development are shooting, editing, dubbing and entering sound. After finishing making the video, the last thing to do is publishing and packaging accordingly.

The Stage of Conducting multimedia video validation of learning the operation of industrial sewing machines by media experts and media experts followed by analyzing the results of material expert validation on the material applied in multimedia videos obtained with an average of 94.2% which is classified as very high which can be categorized as "appropriate" according As shown by Suharsimi's assessment scale, it shows that the quality of content or material is very good, while the lowest percentage in the aspect of multimedia video display is obtained with an average of 80.4% which can be categorized as "feasible" [6]. The description of the discussion above shows that the multimedia aspects are low compared to other aspects but are still categorized as good, so some revisions have been made to multimedia, especially in multimedia video sound.

Getting multimedia learning videos that can be categorized as "feasible" to be used as multimedia learning videos of industrial sewing machine operations based on the percentage of feasibility scale that refers to the data obtained because multimedia learning videos operating industrial sewing machines can provide information visually and audio well to help understanding student, in accordance with what was raised by Riyana "learning video media is a media that presents audio and visuals containing learning messages both containing concepts, principles, procedures, theories, applications to assist understanding of a learning material" [7].

IV. CONCLUSION

Based on the findings and discussion of multimedia research video learning the operation of industrial sewing machines that have been carried out, it can be concluded as follows:

- Industrial sewing machine operation learning is done by conventional methods lectures and demonstration. The media used in the delivery of material in the form of visual media. Based on this, the current learning media still needs to be developed one of them through multimedia video development. The use of video multimedia in the operation of industrial sewing machines is intended to make students more easily understand learning so that it attracts students and create
a more effective learning and efficient and improve the quality of student learning and to learn independently in the operation of industrial sewing machines because it can be played repeatedly until students understand.

- The stages of making multimedia video learning design include arranging flowcharts for menu display in multimedia videos, story boards for designing scenes in multimedia videos and scripts/storylines) based on material for content in multimedia videos. The groove design for multimedia video material consists of industrial sewing machine parts, industrial sewing machine parts, industrial sewing machine parts, first preparation stages of industrial sewing machine operation, preparation of both industrial sewing machine operations, and practice of industrial sewing machine operations.

- Multimedia learning videos of industrial sewing machine operations that have been developed are then validated by material experts and multimedia experts to see whether the product design has met the standards and criteria. The validated multimedia products will be revised as the repair stage and the final assessment phase will be carried out after the learning video multimedia product has been revised.

- The results of the validation of experts on the development of multimedia video learning the operation of industrial sewing machines shows that the multimedia created can be used with the results of validation by material experts get the average value of the percentage of feasibility of 94.2% and by multimedia experts get an average percentage of feasibility of 80.4%.

- Based on the feasibility standard from the results of the validation of the development of multimedia learning videos, the operation of industrial sewing machines by material experts and media experts can be seen that multimedia products Learning videos on the operation of industrial sewing machines that have been made are included in the category eligible to be used in the process of purchasing industrial sewing machines in the Sewing Tools course.

**REFERENCES**


