Implementation EDS-AV (Educational, Develop, Society-Audio Visual) Script Model in Practices Learning

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Abstract. Practice learning is laboratory activity to carry out stages of experimental competence through job sheet learning devices. Job sheet used in generally still in the form of written documents, so it takes a development that can make easy for practitioner. Implementation EDS-AV script model in practical learning is the right solution. The purpose of this study (1) planning design of EDS-AV script model in analog electronics practice learning (2) motivating students to carry out practical learning with EDS-AV script model to experiment complete, and (3) EDS-AV script model can increase attractiveness students in conducting experiments of audio-visual job sheet. The development model is combination several models that have been developed previously and modified into EDS-AV script models of Audio-Visual based job sheet documents. The result obtained based on description of expert validation data include aspects: material feasibility, language feasibility, presentation feasibility, media effects on learning, and overall appearance that are is very good category. Implementation of learning results is very good category, as well as students responses to EDS-AV script model is very good category. The conclusion of implementation EDS-AV model in analog electronic practical learning has been well implemented as well as student response are in very good suggestion.

1. Introduction

The application of models in learning systems is the process of creating learning habits that enable the learning process to occur. Learning is an activity from someone in interacting with the environment that results in behavior changes that are relatively constant. In an effort to create an innovative learning model, audio-based learning is very instrumental in improving the quality of education.

Learning media is everything that people use to deliver messages [1]. Media as a type of component in the student environment that can stimulate them to learn [2]. Media is also interpreted as a tool to provide incentives for students to occur in the learning process [3]. So the media is a tool to motivate the learning process.

However, the development of audio-visual based learning in improving the quality of generations must be balanced with the education of character generation. Some experts suggest that Media is expected to play a critical role in enhancing academic performance. They received fruitful results and provided solid evidence that multimedia materials can be used to facilitate learners’ text comprehension effectively, especially in science education [4]–[6].

Learning media technology is a scientific application of the learning process in humans in the practical task of teaching and learning from everything that is used to channel messages and can
stimulate the mind, feelings, attention, and willingness of the learning so as to encourage the learning process delivered to learners by scheduling, sorting and organizing [7], [8].

This visualization is the initial information before someone does a practical activity by following the work step information visualized in the form of a tutorial that is packaged in the form of a video that is adjusted to the work steps of each competency achievement. The importance of direct experience of the learning process has been assessed by [9], [10]. Kolb said that adult learning would be more effective if the learner was more directly involved than just passively receiving from the teacher [10], with experiential learning theory, it describes ideas from experience and reflection. Kolb defines four modes of learning that is: Concrete experience, reflective observation, abstract conceptualization, and active experimentation.

There are two sources of knowledge, namely knowledge received / obtained through learning both formally and informally (received knowledge) and knowledge gained through experience (experiential knowledge) [9]. Both sources of knowledge are key elements for the development of professionalism. Wallace assumes that each training participant brings knowledge and experience when entering a new training. Wallace also explained that the effectiveness of training depends on how the trainees reflect on the link between knowledge and experience and practices to improve their learning further. The ability to reflect on practices based on experience and knowledge can determine the achievement of professional competence.

Visual media used in the teaching and learning process has many benefits and advantages, including being able to guide the practitioner in carrying out the practice through laptop and android aids so that it becomes more practical. It can also make it easier to repeat the experimental steps in practice, so that the video can describe a process correctly and can be seen repeatedly, the video also encourages and increases student motivation to keep seeing it.

The importance of implementing the EDS-AV script-based learning model in implementing laboratory practices, this study purposed to design EDS-AV script-based learning models, namely; (1) planning the design of the EDS-AV script model in practical learning in analog electronics practice courses. (2) motivating students to implement the practice by utilizing the EDS-AV script model in practical learning as a learning model. The EDS-AV script model can increase the attractiveness of students in conducting competency experiments that are the learning objectives. This model is also expected to provide a solution to the method that has been applied in the laboratory so far by giving an explanation of the work steps of each trial that will be carried out. The implementation of the EDS-AV script model can be used without an explanation from the instructor because the audio visual media can be seen by the practitioner before implementing the practice. It is expected to be a useful reference to resolve the problem of available time with the number of practitioners who will carry out the practice. This EDS-AV script-based practical learning makes it easy for practitioners to understand the experimental steps because they can play back the audio visual media.

Audio-visual is a media that has sound elements and image elements. This type of media has a better ability, because it covers both types of auditory (hearing) and visual (viewing) media. The meaning of the word media, audio, and visual is seen from etymology "the word media comes from Latin and is a plural form of the word" medium "which literally means an intermediary or introduction, meaning as an intermediary or a tool to convey something.

Stressing the effectiveness of visual materials in learning, estimated that about 40% of our concepts are based upon visual experience, 25% upon auditory, 17% on tactile, 15% upon miscellaneous organic sensation and 3% upon taste smell [11]. The statement shows that broadly the process of receiving information is much influenced by visual (vision) and auditory (hearing). This statement is reinforced by research conducted by [12] in his research on the influence of audio-visual media in learning activities which states that the use of audio-visual media has a significant influence on the process of learning and teaching in secondary schools.

The audio-visual intended in the EDS-AV learning model is media that can display moving sound and image elements, sound elements and elements of the image originating from a source that contains information about analog electronics practice learning. In general, the EDS-AV based learning model is intended to provide information based on an audio-visual technology approach in which there are elements of education, development of the learning process, and the relationship of a practitioner to the
experimental steps. So that the design of EDS-AV script learning media is very suitable to be used as an alternative learning model that can involve all parties, namely students, instructors, parents, and the surrounding environment.

2. Research methods
This research is a development research that seeks to make new products in the learning model, in accordance with the definition proposed by [13], namely development research is a systematic study of design, evaluation design, teaching programs, processes and products that must be meet the criteria for internal consistency and effectiveness. EDS-AV is an acronym abbreviation that is pronounced as a syllable and is a combination of initial letters that have different meanings. The use of the word EDS-AV is intended to make it easier to remember this learning model, as well as to distinguish the learning models that have been made by previous researchers.

The learning development model that will be used in this research is a combination of several learning system development models and learning device development models that have been previously developed and modified based on needs. The reason for combining several models of development of learning that already exist because each has advantages. These advantages were adapted in the design of the EDS-AV script model in practical learning analog electronics courses.

3. Result and Discussion
The material expert who became the validator in the product development consisted of several experts who were competent in their field relating to practical learning material. Material experts are taken based on experience and expertise in the field of learning models in this case the lecturers in charge of the subject. The results of the assessment by material experts are as follows.

3.1. Aspects of Material Feasibility
The material feasibility aspect consists of several indicators including: practical learning material adapted to the jobsheets used in analog electronics practice. Jobsheet is a worksheet for each practical experiment or competency settlement that is prepared in a step of experimental work that is targeted in the preparation of the script. The work steps in the worksheets designed in the form of audio-visuals will be a guide in implementing the practice. The stages in the visual form will flexibly adjust the desires of the practitioner.

Scripts that will be implemented in the form of audio visual are designed based on the level of understanding of students in digesting each step in conducting experiments that include cognitive, psychomotor. And affective is a unity in the script or storyline.

Table 1. Results of material experts' assessment of material feasibility

| Aspect                                                                 | Average score | Category       |
|-----------------------------------------------------------------------|---------------|----------------|
| Learning Materials: The practice of analog electronics is organized into jobsheets based on competency in RPS | 8.5           | very good      |
| The perceptions contained in the story can strengthen the memory of the students looking at each command in the experimental step. | 8             | very good      |
| The flow of the story in the script according to the competencies to be achieved and easy to understand | 7.5           | good           |
| The concepts in the storyline are adjusted to the level of difficulty and abstractness and in accordance with the level of thinking of students so that they can be easily translated | 7.5           | good           |
| The introduction is presented according to and related to the condition of students in practice | 8.5           | very good      |
| Scripts/Paths of story according to the material on the jobsheet       | 8.5           | very good      |
Learning aspects that include cognitive, psychomotor and affective have been integrated in the material.

3.2. Feasibility of Language Aspects
Aspects of language feasibility consist of several indicators including; the instructions for using scripts are clearly stated, the use of language supports, ease of understanding the storyline, the use of language that is polite and does not reduce the purpose of the practice, the dialog text used in the script can convey the material appropriately.

| Learned aspects | Average score | Category |
|-----------------|---------------|----------|
| The instructions for using the EDS-AV script are clearly stated. | 9 | very good |
| The use of language supports the ease of understanding the storyline | 8.5 | very good |
| Use of language that is polite and does not reduce the purpose of practice | 8.5 | very good |
| The dialog text used in the script can convey the material correctly | 8 | very good |

Table 2. Results of material expert assessment on linguistic aspects

3.3. Aspects of Feasibility of Presentation
The feasibility aspect of the presentation consists of several indicators namely; material presentation encourages students to be actively involved in learning, presentation of characters in interesting and proportional scripts, storyline presented in audio visual form support the ease of students to understand the material.

| Learned aspects | Average score | Category |
|-----------------|---------------|----------|
| Material presentation encourages students to be actively involved in practical learning | 8 | very good |
| Presentation of characters in interesting and proportional scripts | 8 | very good |
| The storyline presented in the form of Audio Visual supports the ease of the reader to understand the material | 7.5 | good |

Table 3. Results of material expert assessment on aspects of presentation

3.4. Aspects of Media Effects on Learning
The aspect of media effects on learning consists of several indicators, namely: easy audio visual to be used in the practice learning process, both individually and in groups, audio visual media is able to increase student motivation in carrying out experiments in analog electronics practice, practice through the EDS-AV script model.

| Learned aspects | Average score | Category |
|-----------------|---------------|----------|
| Audio Visual is easy to use in the learning process, both individually and in groups | 8.5 | very good |
| Audio Visual media can increase student motivation in understanding the experimental steps | 8 | very good |

Table 4. Results of material experts' assessment of media effects on learning
3.5. **Feasibility of Comprehensive Display Aspects**

The feasibility aspect of the overall display aspect consists of script indicators designed by adjusting the level of understanding of students in understanding the experimental steps in the practice of analog electronics

| Learned aspects                                                                 | Average score | Category     |
|--------------------------------------------------------------------------------|---------------|--------------|
| The script/storyline is designed by adjusting the level of understanding of the experimental steps | 8             | very good    |

From the observations it is known that practical learning by utilizing EDS-AV script models on analog electronics courses in the form of practice guides with audio-visual results obtained from the implementation of learning in each experiment summarized in Table 6.

### Table 6. Observation of the learning process

| Assessment aspects                  | Percentage (%) | Observation Score |
|-------------------------------------|----------------|-------------------|
| Audio quality                       |                |                   |
| Video quality                       |                |                   |
| Audio-visual clarity of the experiment |                |                   |
| Student understanding every step of the experiment | 100 | 0 |
| Repeat/audio-video playback step experiment |           |                   |
| Student responses in general        |                |                   |
| Average score                       |                | 3.72              |

Criteria: very good, very good

Improved management of this learning shows that the use of audio-video technology in the implementation of practice is able to improve students' thinking skills in carrying out the practice. The implementation of the EDS-AV script model syntax in practice learning is well implemented. After the learning process is complete, students are given a response questionnaire to find out the students' responses during the analog electronics courses that apply the EDS-AV script model.

### Table 7. Student responses to the EDS-AV script model in practical learning

| Statement | Yes | Information     |
|-----------|-----|-----------------|
| 1         | 53.33 | strong enough |
| 2         | 73.33 | strong |
| 3         | 90.00 | very strong |
| 4         | 86.67 | very strong |
| 5         | 86.67 | very strong |
| 6         | 83.33 | very strong |
| 7         | 90.00 | very strong |
| 8         | 80.00 | strong |
| 9         | 86.67 | very strong |
| 10        | 86.67 | very strong |
From the above explanation it can be concluded that the average of all aspects shows a positive response that is equal to 82.78% with very strong criteria whereas those that show a negative response are 17.22% with very weak criteria.

4. Conclusion

Audio-visual media design for practical learning is a comprehensive accumulation of various learning media which theoretically supports the implementation of practice with the following conclusions:

a. The implementation of practical learning with the EDS-AV script model was carried out very well with an average score of 3.72%.

b. Student responses to the implementation of the EDS-AV script model on analog electronics practice learning were overall aspects of 82.78% with very good criteria.

c. Overall, the implementation of the EDS-AV Script learning model in practical courses is very helpful for practitioners to complete each step of the experiment.

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Acknowledgments

The authors would like express their sincere gratitude to all of the parties who have helped them in preparing this journal. Great thanks are extended to Faculty of Engineering, Makassar State University for journal writing support.