

Developing Constructivist E-Learning for Food Exhibition Class of Home Economics Students in State University of Makassar

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Abstract

The purpose of this study was to develop constructivist learning model with e-learning materials. Components of the learning model consists of four syntaxes, namely Analysis, Narration, Development, and Implementation (ANDI). The development of the model was following the steps in R & D, formulated and modified the Four-D and ADDIE model which mainly covers (1) pre-development, (2) development and (3) assessment. The try-out of this learning model was conducted through individual testing, small group testing and field testing. The field testing is conducted to test the effectiveness and influence of the learning materials towards the students' acquisition in food exhibition class majoring Home Economics. The results shows that the learning model ANDI is appropriate to be used for food exhibition class and the syntaxes are suitable for the characteristics of the course. The assesment of learning materials by experts of instructional design, instructional media, and home economics subjects shows that this model is very good. Based on the individual and small group testing, the results show very good and interesting. The field testing result shows that it is very good for the category Analysis, good for the category of Narration, very good for the category of Development and Implementation.

Keywords

Constructivistic, E-Learning, Home Economics, Model Development, Food Exhibition Class

I. Introduction

Qualifying graduates of education program majoring culinary are the scholars who meet the sixth level of National Qualification Framework (KKNI). The characteristics of the sixth level of KKNI are the students should (1) relate to the implementation of their expertise and utilize science, technology, and arts in solving a problem and attain to adapt to any situation, (2) understand the theoretical concepts of a particular subject in general and specific part of the subject thoroughly, and capable of formulating solutions of a procedural problem, (3) be able to take the right decisions based on the analyzed information and data, and be able to provide guidance in selecting various alternative solutions independently and in groups, (4) take responsibility for his/her own works and trusted to help team's works [1]. Efforts to achieve the demands of the sixth level of KKNI is represented in the process of learning and the learning outcomes. Therefore, it is necessary to pay attention to and facilitate the development of the individual potential and groups, both in the realm of knowledge, attitudes and skills optimally in learning at college level. The development of these three areas is the starting point in building a qualified and competitive human resources in the fields studied.

Such efforts are inseparable from the development of emulation ability rather than just imitate. The indicators of emulation ability

are shown by the skills in synergizing various information, tips, goods, services, systems, and mindset to produce something new which is more superior in terms of added value and competitive than the existing products [2]. Learning in formal school is focused on how to devour a variety of information. Though the information was the same as it is always news and express the things that have happened. This phenomenon is seen as less supportive in developing students' emulation ability, creative thinking, creativity and innovativeness, and tend to be target oriented, which teaching is solely limited to the process of memorization that less related to the knowledge that is relevant to life, both in the present time and in the future.

Such conditions are an attempt to reduce students turn into memorizing machines and to increase the opportunity of training thinking, developing the potential of the initiative, intuition, and imagination. Learning tends to still implement the maintenance learning, which is a learning activity conducted primarily to maintain what already exists in the community held as a cultural heritage. If this is continued, then students's will have a negative mindset, fear of failure, fear of trying, afraid to take risks, too depend on others and lack of confidence. As the implications of these characteristics, there will be more bribery, collusion, corruption, nepotism, and many more, which eventually will reduce the meaning of ability and professionalism [2-4].

Improving the quality of education as the effort to improve the quality of human resources, both as the preservice productive teachers or as productive employees is crucial. One way to improve the quality is through the renewal of learning process. The tendency of technology and vocational education demands a comprehensive and sincere reformation in learning [5]. A new paradigm shift in making innovations learning is necessary. A study [6] reveals that the systems and learning organizational patterns must be reformed in accordance to the global trend and maintain the noble values that shape so the Indonesians' identity.

In the same vein, learning is a facilitated process of learning with manipulated the available learning sources to create conducive and comfortable learning environment to achieve the learning objectives [7]. Learning in science and technology, viewed from its purposes, leads to the development of emulation ability than imitation ability [8-9]. The output of technology and vocational education is defined by effectivity and efficiency level of teaching and learning process [10].

Learning achievement is indicated by fundamental skills and functional capabilities. Fundamental skills covers intelligence, emotionality, physical skills. Intelligence consists of thinking deductively, inductively, scientifically, critically, creative, explorative, discovery, logically and systematically. Emotionality and spirituality cover emotion, morality, compassion, politeness, tolerance, honesty, cleanliness, discipline, self-esteem, responsibility, courage, diligence, commitment, aesthetics, and

ethics. Physical skills cover health, stamina, and endurance. Functional capabilities include the ability to utilize technology in life, the ability to manage resources, cooperation skills, the ability to use information, entrepreneurship skills, and vocational abilities. This can be done well with good communications between teachers and learners [11-13].

II. Research Method

This study is a research & development (R and D). The developed model, ANDI, is inspired, formulated and modified by the Four-D model (Define, Design, Development, and Dissemination) by Thiagarajan [15] and ADDIE model [14] (Analyze, Design, Development or Production, Implementation or Delivery and Evaluation). ANDI learning model is the acronym of stages in learning process; Analysis, Narration, Development, and Implementation. The data collection techniques that is used to look at the effectiveness of learning food exhibition with learning model ANDI are observation, performance evaluation, documentation and questionnaires. The Figure 1 shows the procedure of developing the ANDI learning model and learning materials.

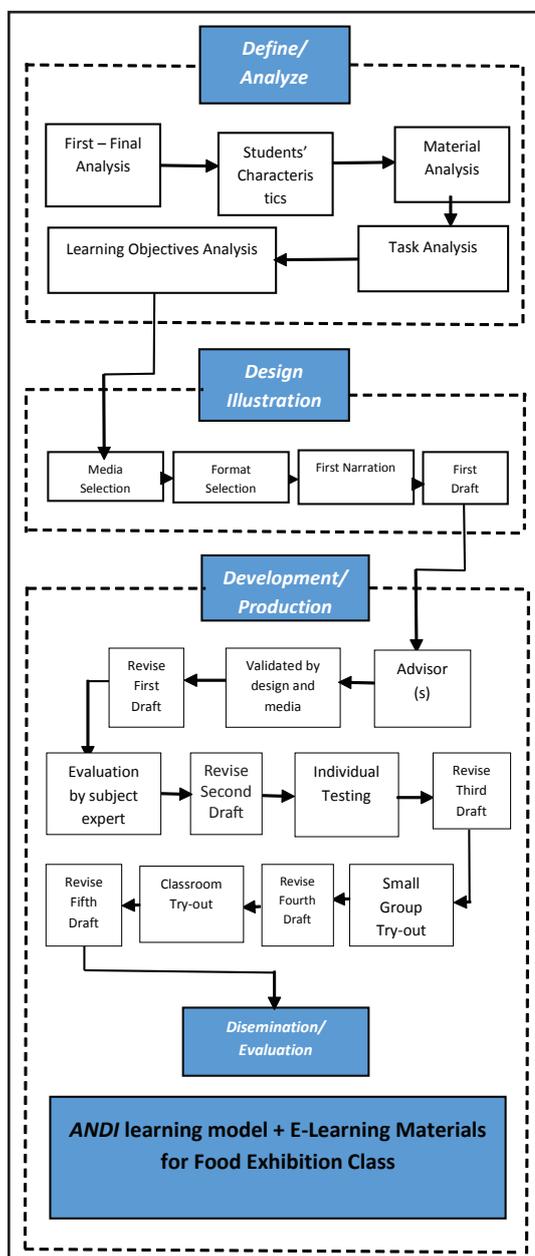


Fig. 1: Procedure of developing ANDI Learning Model and E-Learning Materials for Food Exhibition Class

During the initial stage, analysis on students' characteristics, learning materials, tasks, and learning objectives need to be carried out. In the next stage, Narration, drafting a learning model, syntaxes, format and media selection. After analyze and narrate everything, Development is the next stage; validated by design media and subject experts. Following the feedback from the experts, evaluation from subject expert of learning materials is the next thing to do. Then, revise based on the feedback from the experts and continued with individual testing on 3 students as the representation of low, medium and high GPA score. The result of this stage will be used as the basis of conducting small group try out with 9 culinary students and classroom try out with 20 students. Classroom try out aims to see the effectivity of ANDI learning model. The last stage is Implementation, which will implement on the real class to see the contribution of ANDI learning model towards the development of students' emulation ability, creative thinking, creativity and innovation in food exhibition class.

Table 1: Activities in Creating Products for Food Exhibition in ANDI E-Learning Model

Sintaxes	Indicators	Activities
Analysis	Selection of ingredients Additive ingredients Coloring ingredients Food preservatives	Selection of ingredients Additive ingredients Coloring ingredients Food preservatives
	Characteristics of ingredients	Fruits, vegetables, beans, flour, seafood, etc.
	Tools selection	Preparation tools, processing tools, presentation tools.
	Appropriation product	Infants, toddlers, children, adults, the elderly, heavy labors, light labors.
	Processing method	Select and specify the method of processing; moist heat, dry heat.
Narration	Production method	Select and specify the method of production: SCAMPER[16].
	Sketches/ illustrations, pictures/ photos and top stories	Describe the process and product in the form of sketches/ illustrations, pictures/ photos and story.
Development	Experimentally, the organoleptic test, test panelists, GMP, nutrition calculation, the selling price	Conduct experiments to make a product based on analysis and narration. Record the process of making the product step by step.
Implementation	Appetizer Maincourse Dessert Food industry Beverage	Present the students' products in Food Exhibition, which include: Appetizer/ Maincourse/ Dessert/ Food industry/ Beverage.

III. Result and Discussion

Based on the result of classroom try-out, there are 86% of the students who have the ability to analyze the basic and additional ingredients, processing tools and presentation tools that will be used in food exhibition. Supported by the data from observation and questionnaires, the students are very enthusiastic in exploring ingredients, tools and appropriate technique, both through the internet and prepared learning materials (modules). The search is based on the usefulness, uniqueness, scarcity and economic value of ingredients. The result showed that the syntax Analysis obtain very good value. This means that students have excellent creative ideas.

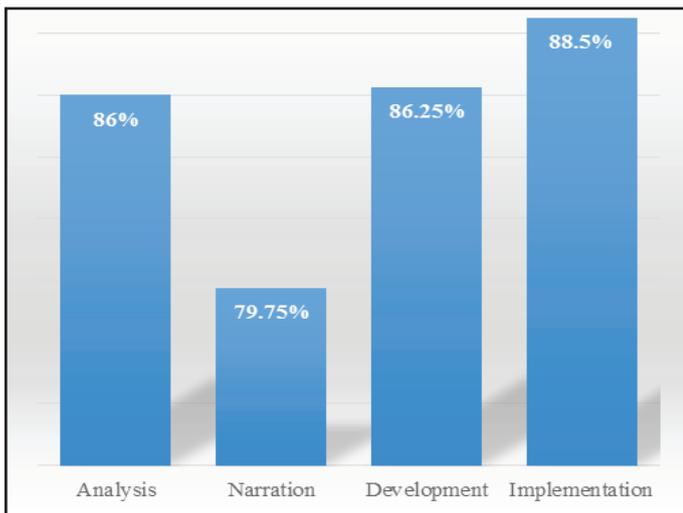


Fig. 2: Results of Classroom Try-Out of ANDI Learning Model

The syntax Narration is in the good category. The results showed a 79.75%. This is due to constrained by the initial knowledge of students to the narrative in the form of sketches, computer-assisted program or manually.

The syntax Development shows that 86.25% students are in the very good category in doing experiments and generating creative recipes. This is because the students' initial knowledge and experience has been pretty good. The results of the questionnaire data show that students are more focus in doing the experiment since they have been carefully planning in the analysis stage.

The syntax Implementation is also in the very good category. Seen from the appearance of the products creation such as appetizers, maincourse, dessert, and food industries. This is because the students have seen pictures of the products and attending the Food Exhibition.

IV. Conclusion

ANDI learning model is a well worth used in food exhibition class. The syntax Analysis of ANDI is really helpfull in generating students' creative ideas on the selection of materials, equipments, processing techniques and product designation by selecting and using the technique of Substitution, Combination, Adapt, Put other uses, Eliminate, and Rearrange (SCAMPER). The syntax Narration is also good in guiding the students in describing the products that will be created as a creative process. The syntax Development is very good in helping the students doing experiments repeatedly in accordance with the original idea (planning), paying attention to Good Manufacturing Practice (GMP), conducting organoleptic test, and finding creative recipes with decent results, then calculating the nutritional value of products. Organoleptic test results are categorized as creative recipes. The syntax Implementation is

very well in guiding the implementation of all kinds of menus such as appetizer, maincourse, dessert, snack, beverage and food industry based on the stages of processes that have been passed and presented at Food Exhibition with attention to the taste of food, the use of container and appropriate garnish as a creative presentation.

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