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Development of Nursing Management Learning Devices Based on A Scientific Approach to Maintain Science Process Skills During The Pandemic at Nursing Student of Stikes Hang Tuah Surabaya

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ABSTRACT

This research is development research that aims to develop learning tools for nursing management courses based on a scientific approach that is valid, practical, and effective for nursing students at Stikes Hang Tuah Surabaya to improve science process skills during a pandemic. The research parameters measured include device validity, practicality, and effectiveness. Data collection techniques comprise validation methods, observation and tests, and questionnaires. The results of the study indicate that the learning tools for nursing management courses based on a scientific approach are valid, practical, and effective.

Keywords: Learning Tools, Scientific Approach, Science Process Skills

INTRODUCTION

Education aims to improve quality human resources. Learning with a scientific approach expects students to have balanced and integrated competencies between attitudes, skills, and knowledge so that they can create productive, creative, innovative, and effective human resources with high competitiveness (Arsanti, 2018). Learning that occurs during the COVID-19 pandemic is distance learning, which is conducted either through online or offline learning. However, Most use a combination of online and offline (Setiawan, 2020). Learning in the classroom which was originally face-to-face must inevitably use technology such as video conferencing or web conferencing. Likewise, learning outside the classroom also takes advantage of various technologies. The most possible system for learning during the pandemic is to use a blended learning system, namely online, offline, and a combination of both. Educators and students must constantly be familiarized with this learning by making continuous innovation and creativity (Laili & Tanoto, 2020). Education is an effort to develop and foster the potential of human resources through several activities (Fajriyah, Wardoyo, & Putri, 2020). The problem of education is highly complex if it is not properly handled (Farida, Tippe & Tunas, 2020), other than that, attitude is one of the important topics in research on the learning process (Wuisang, Korompis & Lempas, 2019).



To achieve the expected learning objectives, an educator needs to pay attention to the factors that influence the process of implementing and developing learning. Learning development is an effort to improve the quality of the learning process, materially, methodically, and in substance. By materially means that teaching materials are harmonized with the development of knowledge, while methodologically and their substance are related to learning strategies, both theoretically and practically (Basri, 2017).

Nursing management course learning needs to develop science process skills by taking into account the factors supporting its implementation. The determining factors of student achievement are internal factors consisting of physiological factors (health and senses) and psychological factors (intelligence, attitudes, and motivation). In addition, there are also external factors, namely family environmental factors (family socio-economics, parents' education, atmosphere of relationships between family members), school environmental factors (facilities and infrastructure, educator competencies, curriculum, and teaching methods), and community environmental factors (social culture, participation in education) (Basri, 2017).

One of the factors supporting the implementation of the learning process that needs attention and development in schools is educational facilities. They are all equipment, materials, and furniture that are directly used in the educational process consisting of the syllabus, lesson plans, student activity sheets, books, modules, handouts, audio-visual materials such as video, cassettes, radio, and audio CDs, pictures and models/mockups (Perceka, 2016).

Based on the results of interviews the implementation of learning has not followed the latest developments as the learning remains centered on educators, rather than student-centered. Students only rely on books as a learning resource, despite their limited supplies. The results of interviews and documents studied to prove that the learning tools used to achieve learning objectives have not been developed optimally.

Learning tools in the form of student teaching materials and student Activity Sheets that can assist students in achieving learning objectives have not been fully developed leading to predetermined indicators. Educators tend to evaluate the learning process that focuses on cognitive aspects so that aspects of the process and student performance are not given much attention. The process skills approach is a driver for discovering and developing facts, concepts, and principles of science that will support the development of process skills, attitudes, and values of scientists in students (Suryaningsih, 2017). The purpose of process skills is to develop students' creativity in learning so that students can actively develop and apply their abilities not only to achieve results but also to learn how to learn. The abilities that are expected to be formed through process skills are observing, classifying, interpreting, predicting, planning research and applying, and communicating (Rohman & Lusiyan, 2017).



Nursing Management Course as one of the theoretical and practical courses provides a variety of learning experiences to understand the concepts and processes of science. The learning experience includes observing skills, proposing hypotheses, using tools and materials properly and correctly by consistently considering work safety and security, asking questions, classifying and interpreting data and communicating findings orally or in writing, exploring and sorting out factual and relevant information. to test ideas or solve everyday problems (Febiola, Gultom and Tambunan, 2021). For this reason, in the teaching and learning process, learning tools that can train science process skills are needed (Salimah, Arifuddin, & Annur, 2019). On this basis, it is deemed necessary to research the development of learning tools for nursing management courses based on a scientific approach to maintain science process skills during a pandemic for nursing students at Stikes Hang Tuah Surabaya.

RESEARCH METHOD

This research focuses on the development of learning tools based on a scientific approach to improve skills during the Pandemic in nursing management courses. The learning tools developed in this study consisted of semester learning plans, lesson plans, teaching materials, student activity sheets, and science process skills assessment instruments. The development process refers to the 4-D development model which consists of four stages, namely 1) defining, 2) designing, 3) developing, and 4) disseminating. The trial was carried out at Stikes Hang Tuah Surabaya even semester 2020/2021 in the nursing management course.

The trial design of this device uses the One Group Pretest-Posttest Design, which applied to one group, without a comparison group. Table 1 presents the pattern:

Table 1. Trial Design Pattern

Test 1	Treatment	Test 2
O ₁	X	O ₂

Note:

- O₁ : Pre-tests, to determine students' science process skills before being given treatment
- X : Treatment, namely the implementation of learning by applying a scientific approach-based device that has been developed
- O₂ : The final test, to determine the students' science process skills after being given treatment

The data collection was conducted by the following techniques. First, it is validation to ask for an assessment, consideration, and input from experts on the learning device developed by filling out the validation sheet so that the data is used as an indicator of the feasibility of the learning device to be used. Second, it is observations made by two



observers on the implementation of the stages of learning and student activities during learning by filling out the observation sheet. Third, the tests were administered twice, namely 1) the initial test, given to students before the application of scientific approach-based learning tools to determine students' initial abilities, and 2) final tests, to measure students' science process skills after participating in the learning planned by researchers. Fourth, dissemination of questionnaires to students after the entire learning process is completed to collect response data on learning that applies learning tools based on scientific approaches. The data obtained were analyzed descriptively quantitatively.

RESULTS AND DISCUSSION

In this section, the research results will be presented in the form of tables and descriptions.

Validation of Learning Tools

The following will describe in detail the results of data analysis and discussion.

The results of the learning device validation analysis assessed by the validators are presented in Table 1.

Table 1. Learning Tool Validation Results

No	Device	Validator 1	Validator 2	Average	Category
1	RPS	3.80	3.35	3.57	Valid
2	RPP	3.67	3.25	3.45	Valid
3	LKS	3.60	3.41	3.50	Valid
4	BAS	3.69	3.49	3.59	Valid
5	Instrument test	3.83	3.41	3.62	Very Valid

Table 1 shows that the developed learning tools have valid and very valid categories, meaning that the developed learning tools are feasible to use.

Practical Devices

a. Analysis of the Implementation of the Learning Implementation Plan

The Learning Implementation Plan was observed by two observers using observation sheets carried out for seven meetings. The results of data analysis show that the management of learning based on a scientific approach as a whole was carried out well because the lesson plan has been prepared systematically, completely, and thoroughly with several possible adjustments in the actual learning situation. Thus the lesson plan can function to streamline the learning process according to what is planned. The data of the observations are presented in Table 2.



Table 2. Analysis of the Implementation of the Learning Implementation Plan

No	Observed aspects	P1	P2	Average	Category
I	Preliminary				
	1. The lecturer starts the lesson by saying greetings and praying.	4	4	4	B
	2. The Lecturer conveys the subject and learning objectives.	4	4	4	B
	3. The Lecturer conveys the learning mechanism	4	4	4	B
	4. The Lecturer appreciates	3	4	3.5	B
	5. The Lecturer motivates by showing various concepts of nursing management.	4	4	4	B
				3.9	B
II	Core activities				
	Identifying the characteristics of Nursing Management courses				
	6. The Lecturer distributes student worksheets to each group and explains work procedures.	4	4	4	B
	7. Students observe existing theories and concepts and pictures that are displayed as additional information about the characteristics of the professional nursing practice model	4	4	4	B
	8. Students formulate a question about the classification of nursing management based on stages and functions in health services.	4	3	3.5	B
	9. Students record the results of observing chart characteristics by filling out student worksheets.	3	4	3.5	B
	10. Students analyze their findings to identify the characteristics of each management organization chart in theory and practice in health services which are discussed together with mutual respect.	4	4	4	B
	11. Students conduct discussions to agree on the results of observations and data analysis to be formulated into a conclusion that will be presented.	4	4	4	B
	Various methods of professional nursing practice				
	12. Lecturers display teaching materials in the form of diagrams of professional nursing practice models	4	4	4	B
	13. Students make observations about the professional nursing practice model chart on the picture carefully, thoroughly, as an expression of curiosity	4	4	4	B
	14. Students are asked to formulate a question about the professional nursing practice model chart.	4	4	4	B



No	Observed aspects	P1	P2	Average	Category
15.	Students conduct a literature study on the professional nursing practice model chart.	4	3	3.5	B
16.	Students are asked to explain the professional nursing practice model chart and record the results at each stage of its implementation.	4	4	4	B
17.	Students in groups develop their findings to find out the process of the professional nursing practice model that is discussed together.	4	4	4	B
Stages of nursing management function					
18.	Students conduct a literature study on the stages of management functions in the application of professional nursing practice models in health services	3	4	3.5	B
19.	Students record the results of literature studies	4	4	4	B
20.	Students in groups develop their findings to find out the stages and functions of the professional nursing practice model in health services discussed together with mutual respect	3	4	3.5	B
21.	Students make conclusions about the stages and functions of the professional nursing practice model.	4	4	4	B
22.	Representatives from the group present the results of the discussion in front of the class and other groups are given the opportunity to express opinions based on the results of their group discussions to complete the results of the presentation.	4	4	4	B
23.	Lecturers provide additional information about the stages, functions and characteristics of the professional nursing practice model that is practiced in health services as reinforcement of student conclusions	4	4	4	B
24.	Students make comprehensive conclusions about the stages, functions, characteristics, classification of professional nursing practice models.	4	4	4	B
				3.87	B
III Closing					
25.	Formative test (prepared questions)	4	3	3.5	B
26.	Giving feedbacks/reflections	4	4	4	B
27.	The lecturers gave the task of making a model chart of professional nursing practice	4	4	4	B
28.	Closing pray	4	4	4	B
				3.88	B
Implementation of lecture meeting plan with good category					



b. Student Activity Analysis

Student activities were observed by two observers for 7 meetings referring to the desired activities in scientific learning, namely observing, asking questions, collecting data, associating, and communicating. With a scientific approach, students as learning subjects are trained to develop science process skills to gain knowledge and learning outcomes through a series of scientific processes and work so that students become creative, active, skilled in thinking, and skilled in acquiring knowledge.

This is by scientific rules where students are guided and given more opportunities to observe the object they are studying and discuss the results of their observations according to the learning objectives (Ratunguri, 2015)

Effectiveness

a. Science Process Skills

Effectiveness is seen from the science process skills obtained based on the assessment of skill competencies by using test instruments in the form of pretest and posttest. Completeness of the learning outcomes test is determined based on the achievement of indicators of science process skills, in which students identify and collect data, think logically and systematically on empirical facts to obtain conclusions, present data, and communicate them. The effectiveness of learning is the results obtained after the implementation of teaching and learning activities. To determine the effectiveness of teaching a test can be given because test results can be used to evaluate various aspects of the learning process (Zuraini & Nurhayati, 2021)

Student Response

Student responses are obtained based on a response questionnaire to learning. The high interest of students in learning materials is because the material taught is closely related to everyday life and is supported by the campus environment. Moreover, student teaching materials and student worksheets are new for students. This novelty creates interest which in turn can foster motivation to study the material well. Motivation is seen as a mental impulse that moves and directs student behavior in learning. In motivation, there is a desire that activates, moves, distributes, and directs individual attitudes and behavior in learning. Students consistently paying attention to the subject are not a problem for the teachers as they have a strong intrinsic motivation with their own awareness. Their curiosity is more about the subject. The various disturbances around do not strongly affect them (Sulfemi & Yuliana 2019)

CONCLUSIONS

Based on the results of the research findings and analysis, it was concluded that the learning tools for nursing management courses based on a scientific approach to maintain science process skills during a pandemic are valid, practical, and effective so that they are feasible to use because they can improve scientific process skills in nursing management courses. With a scientific approach, students as learning subjects are trained to develop science process skills to acquire knowledge and learning outcomes



through a series of scientific processes and works so that students become creative, active, skilled in thinking, and skilled in acquiring knowledge.

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