Need Analysis for e-Book of Practicum Instructions based on Tri N (Niteni, Nirokke, Nambahi)

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# Need Analysis for e-Book of Practicum Instructions based on Tri N (Niteni, Nirokke, Nambahi)

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## Article Info

<table>
<thead>
<tr>
<th>Keywords</th>
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<tr>
<td>Need analysis</td>
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<td>e-Book</td>
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<td>3N Based Practicum Instruction</td>
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## Abstract

Practicum instructions are one of the supports for the implementation of practicum activities. Electronic learning media in accordance with the industrial revolution era 4.0. which has the characteristics of one of them is digitalization. The aims of this study are: 1) to describe the need for practical guide e-books for students of the Natural Sciences University of Sarjanawiyata Tamansiswa; 2) describe the needs of 3N-based learning in practical instructions for science students at Sarjanawiyata Tamansiswa University. This research uses descriptive qualitative and quantitative methods. The research data were obtained from the needs analysis questionnaire with answer scores 0 for 'no' and 1 for 'yes'. Analysis of the data used in this research is descriptive qualitative and quantitative analysis. The finding of this study indicate that: 1) Science students at the University of Sarjanawiyata Tamansiswa require practicum e-books with a percentage of 85.64% categorized as very high; 2) Science students at Sarjanawiyata Tamansiswa University need 3N-based learning in practical instructions with a percentage of 94.02 categorized as very high.

**Keywords:** Need Analysis, e-Book, 3N Based Practicum Instructions

## Introduction

Science learning is not only result-oriented but also process. This is following the statement of Armentis, et. al. (2015) that in the learning process, students must be fully involved in the search for information. Students are invited to touch directly to find information with the object being studied. Therefore, students not only learn theory but also solve problems through phenomena in the surrounding environment.

One method that is often used by teachers and lecturers in learning science is the practical method. Practical methods train students and students to learn a phenomenon with certain steps/sequences. Practical activities provide learning experiences for students and students to find out the phenomena that exist in the surrounding environment and problem-solving. The learning must focus on emphasizing activities that stimulate thinking (Armentis et. al., 2015)

The implementation of practicum activities cannot be separated from the availability of practicum instructions. Furthermore, Nengsi (2016) states that the practice guideline is one of the facilities and infrastructure to improve the quality of education. Students in carrying out practical work need to learn in advance what will be practiced. Therefore, the availability of practicum instructions is very important as a guide when carrying out and making practicum reports.

Based on observations in the field, UST science study program students often do not carry practical instructions when practicum activities take place. There are some reasons students do not bring practical manuals, including forgetting to bring, classmates have brought, even do not have practical manuals. Not only this, the use of electronic media by students is not optimal. This shows that the majority of students use gadgets such as mobile phones limited to social networking and browsing. Students are also limited to finding material from internet pages via their cellphones.

Electronic media can be used as a support for learning in the 21st century. This is because, with the use of electronic media, students can access material and study it wherever and whenever. e-books are book software
products that can work using the internet or without the internet (Jannah et. al., 2017). Practicality in storing or using is also a reason for the use of electronic media today.

The flexibility obtained by users when using e-books. Users can download from the internet and use them offline. This is in accordance with 21st-century skills that students are expected to have technology and information media skills. Technology and information media skills consist of: information literacy is students able to access information effectively and efficiently; media literacy is a student able to be able to choose and develop media; ICT literacy where students are able to analyze information media (Wijaya et. al., 2016).

Learning with the 3N approach (Niteni, Nirokke, Nambahi) is appropriate learning for students. This is because participants learn gradually. This is consistent with the statement of Rahayu et. al. (2018) the application of learning with the 3N approach must be gradual, namely Niteni, Nirokke, Nambahi.

Based on the existing problems, research was conducted to develop an electronic book (e-book) practicum guide with the 3N approach (Niteni, Nirokke, Nambahi). The formulation of the problem in this study is how the level of student needs for the practical guide e-book with the 3N approach? The purpose of this study was to determine the level of practical e-book instructions with the 3N approach.

Method

The Borg and Gall development research design consisted of 5 main stages: product analysis developed, product design, small scale and revised trials, large scale, and revised trials, and dissemination (Puslitjaknov Team, 2008). This research is limited to the analysis of products developed. The instruments used in this study were questionnaires and observations to explore the needs of students.

The study involved students of the 5th semester Science Education Program at Sarjanawiyata Tamansiswa University. Research material in Natural Sciences courses 3. The number of students consists of 39 students.

The data obtained from this study are data analysis of student needs. Percentage data obtained are compared with the range given by Riduwan (2014) as follows:

<table>
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<th>The range (%)</th>
<th>Category</th>
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<tbody>
<tr>
<td>0 – 20</td>
<td>Very Low</td>
</tr>
<tr>
<td>20 – 40</td>
<td>Low</td>
</tr>
<tr>
<td>40 – 60</td>
<td>sufficient</td>
</tr>
<tr>
<td>60 – 80</td>
<td>High</td>
</tr>
<tr>
<td>80 – 100</td>
<td>Very High</td>
</tr>
</tbody>
</table>

Results and Discussion

Analysis of the product plan developed using the questionnaire needs analysis and observation. Needs analysis questionnaire was given to students in semester 5 of 2019/2020 Academic Year consisting of 39 students. The results of the needs analysis of the product are presented in Figure 1.
Based on Figure 1, there were 30 students giving reasons that e-books were in line with Era 4.0. It states that 76, 92 percent of students agreed to be developed because it was following the 4.0 era. Prasetyo & Sutopo (2018) suggested that the definition from era 4.0 emphasized the speed element of information availability. One of the 21st-century students' skills in information literacy by accessing information effectively and efficiently (Wijaya et. al., 2016).

Also, 30 students or 76.92 percent agreed with the existence of practical e-books to reduce environmental damage. 39 students or 100 percent stated that the e-book was environmentally friendly. That is because they do not use paper made from wood. E-book in principle is an effort to reduce the use of paper (paperless) in learning activities. The excessive use of paper is a waste and causes a buildup of paper in the office (Dewi et. al., 2014). Paperless is one of the efforts in reducing the negative impact of natural damage that has implications for forest sustainability (Irawan, 2015).

During the practicum in progress, only use printed practicum instructions. This is supported by the data in Figure 1 that the e-book is not yet available. 39 students or 100 percent said that there was no practical guide e-book available.

The use of e-books is practically used. This is indicated in the statements of students with many 29 or 74, 36 percent. Based on these data the average student needs for e-books was 85.64 percent with a very high category. The use of e-books makes students active and more practical learning (Restiyowati & Sanjaya, 2012).

In addition to the need for practical guide e-books, learning with the 3N approach (Niteni, Nirokke, Nambahi) is important to be included in the practical instructions. The students' response to the learning approach using 3N is presented in Figure 2.
A total of 35 students or 89.74 percent gave reasons that the teaching of 3N in practicum needed to understand the niteni, nirokke, and add to the practical learning methods.

Practicum instructions that have been used by students have printed practicum instructions but there is no 3N approach yet. As many as 39 students or 100 percent said no practical instructions were using the 3N approach (niteni, nirokke, and add). Based on field observations, students already understand 3N-based learning when obtaining the material in student affairs courses. But do not understand the application when practicum implementation.

The 3N approach (Niteni, Nirokke, Nambahi) is a teaching that can be applied in the learning process, one of which is the practicum method. Budiati et. al. (2018) gives an explanation Niteni has the meaning of the process of searching and finding meaning (properties, characteristics, procedures, truth) of an object observed through sensory means. Nirokke in Indonesian means imitating so that in the practice of learning students imitate both the attitude and instructions given by the teacher. Adding meaning to the Indonesian language is added. The process of adding requires creativity. Khorì & Haryanto (2018) states that student creativity arises when doing practical activities in the laboratory.

3N is an approach in learning which is cultural preservation. Boentarsono et. al (2018) gives the sense that education is a cultural endeavor that intends to provide guidance in the life and growth and development of a sense of student spirit. Based on the questionnaire analysis and described in Figure 2 36 students or 92.31 percent stated that learning by applying the 3N approach is cultural preservation.

Based on the indicators that the 3N approach needs to be included in the practicum guidelines including the 3N doctrine in practicum, there are no 3N-based practicum instructions yet, and the 3N doctrine is cultural preservation with a percentage of 89.74, 100, and 92.31, respectively. The average obtained from these indicators was 94.02 percent with a very high category. This shows that students need practicum instructions with the 3N approach with very high categories.

**Conclusion**

The results of the analysis and discussion are the e-book of practicum instruction much needed based on the needs analysis and observation questionnaire. The percentage is 85.64, with high criteria. Students agreed to be developed e-book of practicum instruction because of it following the 4.0 era, can reduce the use of paper in learning activities, and practically used. Students also need practical teaching based on tri N teaching because there is no practicum based on 3N, and 3N teaching is cultural preservation. The need for tri N-based practicum instruction shows a very high category with a percentage of 94.02.

**Recommendations**

Based on the results of the needs analysis, further research is needed to develop e-book of practicum instruction which environmentally friendly, following the demands of era 4.0, and based on the teachings of Ki Hadjar Dewantara.

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**References**


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