

The applying of KKNI-based
textbooks as productivity
facilities student creativity
program

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The applying of KKNI-based textbooks as productivity facilities student creativity program

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Abstract. This study aims to describe the effectiveness of applying KKNI-based textbooks Productivity Facilities Student Creativity Program in the Mathematics Learning Evaluation course in the Mathematics Department of Medan State University. It was conducted by using descriptive research methods. It was conducting on Medan State University with a sample of third-semester students of Mathematics Education Study Program, it was 50 students who took Mathematics Learning Evaluation courses. Based on the observation result, it can be concluded that the applying of KKNI-based textbooks on Mathematics Learning Evaluation course effective in supporting the productivity of the Student Creativity Program in Mathematics Department, Medan State University. This is evidenced by the results of the percentage of student activities at 96.67% and 92.6% on student learning motivation. Also, students can complete PKM with a total of 7 proposal titles.

1. Introduction

Nowadays, Medan State University is implementing and developing Indonesian National Qualifications Framework (KKNI) curriculum. KKNI curriculum is a manifestation of the quality and identity of the Indonesian people relating to the national education system, training and an equivalence system for national learning achievement [1-5]. The aims are to produce quality and productive national human resources. Related to learning, KKNI curriculum also includes aspects of building national identity that are reflected in Pancasila, 1945 Constitution, and Unity in Diversity is upheld the fifth practice of the Pancasila precepts and law enforcement, and has a commitment to respect the diversity of religion, ethnicity, culture, language, and art which grows and develops on the earth of Indonesia [1,6]. So, by applying the KKNI curriculum, learning is expected conducted at Medan State University can produce graduates who are professional and highly dedicated.

To realize the goals of the KKNI curriculum, one of the determining factors of its success is the role of a lecturer. It is because of lecturers as the spearhead in learning that transfer knowledge to students. In another word, the success or failure of learning is influenced by the lecturer. Law No. 14 of 2015 explained that about the duties of the teacher and lecturer in article 1 who explained that "Lecturers are professional educators and scientists with the main task of transforming, developing, and disseminating science, technology, and art through education, research, and community service" [2]. Furthermore, Article 60 of Law No. 14 of 2015 explains that in carrying out professional duties, The lecturer has several obligations including lecturers must carry out education, research, and community service and lecturers must plan, carry out the learning process, and assess and evaluate learning outcomes [2].



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Related to the lecturers' obligations described above, in 2017 a teaching book for Evaluating Mathematics Learning based on KKNi was developed [7]. Where in the Textbook has been designed with the provision of 6 tasks following the KKNi curriculum such as Routine Duty Critical Book, Critical Journal, Engineering Ideas, Mini Research, and Project Also, the textbook has also been created in Student textbooks for each week and assessment format for 6 KKNi assignments. From the results of the research conducted in 2017, The KKNi-based book can change student learning behavior. It means that through the book can change student learning behavior patterns for the better. In 2018, The textbook has been revised to be more tailored to the needs of students. Because this textbook has a positive effect on students and has been revised then the textbook is used again in the Mathematics Learning Evaluation course.

Students must gain knowledge as much as possible. It can be done in various ways, one of them is by working on 6 KKNi tasks properly and correctly. Through 6 KKNi assignments indirectly students are guided in finding and solving problems in the field, in this case at school. Students immediately plunge into the field to see the reality that is not just a theory. Develop the knowledge that has been given and uses it in finding the expected solution. As well as continuously updating the sciences through the latest books and journals. Aside from 6 KKNi assignments, another way to continue learning and developing knowledge is through the PKM.

PKM has the aim of improving the quality of college graduates so that someday they can become members of the community who have academic abilities that can develop, apply and disseminate knowledge, technology and art and culture of Indonesia [8]. It means students through PKM can continue to develop their knowledge so that it is more beneficial for society. Not only the academic value achieved, but also a sense of responsibility to the Indonesian homeland to remain victorious. Through PKM students can shed everything they have, both science, social, culture all that has been in his mind can be poured into a writing that is more beneficial for the community. Students can also learn to work in teams well, politely and responsibly.

But based on observations made in the Mathematics Department of Medan State University, there are very few Mathematics Department students who participate in this activity. It is unfortunate because considering the number of benefits from the PKM. Many students have not seen how important this activity is. It is certainly very much related to the enthusiasm and student effort in carrying out this activity. For universities PKM is a means to develop student creativity, improve the quality of college graduates so that graduates can become members of the community who have academic abilities that can develop, applying, and disseminating Indonesian science, technology, and art and culture [8].

Based on the explanation above, Medan State University has applied the KKNi curriculum which implements six tasks. As an implementation, all lecturers are encouraged to be able to integrate six tasks in each of the effective courses. KKNi curriculum that must be integrated into courses. Related to Student Creativity Program that is so useful for students, through KKNi-based textbooks that have been developed in 2017, expected to help students in developing their knowledge. As a lecturer, through the textbook can guide students to be more literate and enthusiastic in making Students Creativity Program.

2. Research Method

The research was carried out at Medan State University, Faculty of Mathematics and Natural Sciences, Mathematics Department in odd semester 2018 - 2019. Subjects in this study were students of Mathematics Education majoring in semester 3 (three), totaling 50 students. This research uses a descriptive method. Where the instruments used in seeing the effectiveness of the application of 6 KKNi tasks in the KKNi-based book are PKM productivity tools, namely student activity observation sheets, student learning motivation questionnaires and the number of PKM proposals produced by students. The criteria for seeing the magnitude of activity are in table 1 and for student learning motivation criteria can be seen in Table 2.

Table 1. Criteria for Student Activities

Interval	Criteria
>18	Low
19 - 36	Medium
37 - 54	Medium
55 - 72	High
73 - 90	High

Table 2. Learning Motivation Criteria

Percentage	Kriteria
0%	No one
01 – 25%	Fraction
26 – 49%	Almost Half
50%	Half of it
51 – 75%	Most of the
76 – 99%	In general
100%	All of them

3. Discussion

The results of this study were to see how the effectiveness of the implementation of KKNi-based textbooks as a means of Students Creativity Program productivity (PKM). To see the results of its application can be seen from student activities and student response. Activity observation was carried out by two observers at each meeting and was conducted in 6 meetings. The results of observation can be seen in the Table 3.

Table 3. Average College Student Activity

Activity	Average	Percentage	Category
A 1	45,5	50,56 %	Low
A 2	53	58,89 %	Medium
A 3	61,5	68,33 %	Medium
A 4	71	78,89 %	High
A 5	77	85,56 %	High
A 6	87	96,67 %	Very High

From the Table 3 can be seen that each lecture meeting has increased student activity. At the first meeting student activities tend to be low. This is because students are still at the stage of introduction to courses and PKM. At the second and third meetings, activity increased in the medium category. By directing and mentoring with the help of KKNi-based textbooks, it has succeeded in increasing student activity. And the peak occurs at the sixth meeting, where students have understood and realized that learning and working diligently would bring benefits to themselves as well as developing PKM. Students become enthusiastic in learning which can be seen from the results of observations which reach a very high category with an average score of 87 or 96.67%. This proves that through KKNi-based textbooks can be a means of PKM productivity.

Furthermore, the results of the analysis of student motivation in learning are increased, which initially only 48.9% with the category "almost half" to 92.6% with the "in general" category. It means that at the beginning of learning only "almost a part" had great motivation to learn and after being given direction and guidance, "In general" students are excited and motivated in learning. Students understand the

benefits of all the activities they do. Such great motivation greatly influences the students' active learning. The results of the average motivation value can be seen in the table 4.

Table 4. Average Motivation Score

No	Motivation	Average Score	Percentage (%)	Criteria
1.	Before	2,45	48,9	Almost Half
2.	After	4,63	92,6	In general

Before conducting the research, carried out in advance the preparation of everything needed in the study. Start with completing the learning device in the form of syllabus, RPS, SAP, textbooks, LAM, 6 KKNi assignments, student activity observation sheets, and motivation questionnaires. All of them were designed based on KKNi. It was because Medan State University has required the application of the KKNi curriculum in each subject, including in the Mathematics Learning Evaluation course.

Textbooks are an important part of the learning and learning process. Therefore, textbooks must be able to help students achieve their goals. The textbook plays an important role in teaching and learning. It represents a useful resource for both teachers as course designers and learners [9]. For learners, the textbook may provide the major source of contact they have with the language apart from input provided by the teacher. In the case of inexperienced teachers, textbooks may also serve as a form of teacher training as they provide ideas on how to plan and teach lessons as well as formats that teachers can use [10]. Selection of the right materials makes teaching and learning a worthwhile activity and creates a classroom environment which is efficient, effective and meaningful [11-13].

In 2017, the development of KKNi-based textbooks has been conducted in this Mathematics Learning Evaluation course. The book also provides a syllabus, RPS, student activity sheets (LAM) and instruments related to the 6 KKNi assignments. The textbook has been validated in the field and has received input from the validator so that the textbook is suitable for use by students. This year, researchers continued to develop the textbook, which is to make it a means for students to open their insight into PKM. The textbooks can become facilities for lecturers in guiding students to produce work in the field of PKM, especially in the Student Creativity Program Scientific Article (PKM-A1). PKM-A1 is scientific article writing program originating from a student activity in the field of education, research or community service that he has done by himself (for example case studies, field practices, Community Service Program, student Creativity Program, internships, etc.). So in this activity students submit their written work based on their experience with the team in the form of scientific articles. This is very important for students because it is by the existing KKNi level. There are 9 KKNi levels, can be seen in Figure 1.

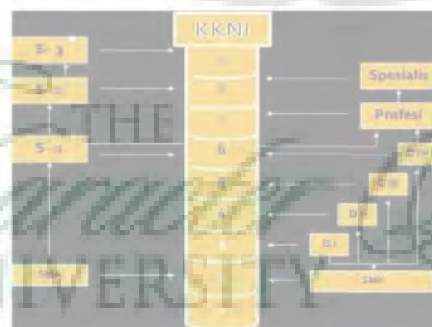


Figure 1. Level of KKNi

From Figure 1, it can be seen that the S-1 level is at level 6. At Level 6, students are required to be able to manage, lead, and develop research and development that is beneficial for science and the benefit of humanity, and able to receive national and international recognition. [3]. Through PKM, students are expected to continue to develop in accordance with the expectations contained in the level-6 curriculum of the KKNI.

The first meeting on the Mathematics Learning Evaluation course, the lecturer gives direction on the 6 KKNI assignments that must be completed and collected according to a mutually agreed schedule. Next meeting, lecturers continuously provide direction and guidance regarding PKM. Starting with introducing what is meant by PKM, how PKM-AI is, what is the goal of PKM-AI, what are the benefits of PKM-AI, both for students, lecturers, UNIMED and the community, till to how to make PKM-AI good and right so that they can take them to national and international levels. So, through textbooks and 6 KKNI assignments, lecturers can lead students to make Students Creativity Program Scientific Program.

The first task given is a routine task. Routine Task is all forms of assignments in textbooks. Routine Task is always given at each meeting and routine. Routine Task was indirectly helping students to understand lecture material better every week. The hope, when the exam period comes, students are not too difficult in preparing themselves. The second task is a critical book review (CBR). In this assignment, students are asked to criticize the textbook Evaluation of KKNI-based Mathematics Learning that is being used. Through CBR assignments, students know the advantages and disadvantages of this textbook. Indirectly students can master the contents of the book well. The third task of KKNI is critical journal report (CJR). Students are asked to criticize a journal that has been determined by the lecturer. The goal is with CJR students can obtain other knowledge related to Mathematics Learning Evaluation. In addition, through CJR lecturers can show how to make a scientific article. This is consistent with the initial goal of guiding students in the PKM-AI.

The fourth task is engineering ideas. After completing the assignment Routine Task, CBR and CJR, students are guided by lecturers to bring up an idea related to this course. These ideas must be following PKM-AI. Therefore, at this stage, the lecturer provides knowledge about PKM-AI. The lecturer explained what was meant by PKM-AI, how the PKM-AI was up to what titles were included in the PKM-AI category. As a result, students understand PKM-AI well and can bring up ideas that are in line with the expectations of the lecturer. The next task is mini research (MR). After getting the first ideas of PKM-AI, students and lecturers/facilitators conduct field studies. Field studies were carried out in several schools, both junior high schools and senior high schools. Activities carried out by students in the field take the form of data through observation and interviews with school residents. This activity aims to see the facts and problems in the field related to the ideas that have been chosen during the assignment of engineering ideas. After obtaining the desired data, students analyze and conclude and find solutions to the problems found. The last is a project assignment. In this last assignment, students carried out the project, namely the making of a PKM-AI proposal. In the process students continue to be guided and given direction to develop a PKM-AI proposal following ideas that have been developed and mini-research has been carried out in the field. This PKM-AI proposal cannot be separated from the material that has been developed in the KKNI-based Mathematics Learning Evaluation textbook. After the scientific article is finished, it is selected by the lecturer to choose which one is eligible to be submitted at the Faculty level and so on.

For the first time, students felt reluctant towards PKM-AI, because students feel developing a scientific article is a waste of time. Only to complete the obligations, 6 KKNI assignments are students already feeling tired and tired. Not to mention they have to learn to understand each subject matter delivered by each lecturer. However, as time goes by and students are always given guidance and direction by lecturers, students become enthusiastic and know how to best make a scientific article without wasting time and can share time with other tasks. Mentoring is part of an educational program that emphasizes individuals [14]. This is evidenced by the result of PKM-AI guidance on this Mathematics Learning Evaluation course. Of the ten student groups, 10 of PKM-AI proposal titles were

obtained. The ten proposals were examined and assessed so that seven proposals were obtained which were eligible to be submitted at the Faculty level.

The selected titles are the effect of using cell phones on the difficulty of understanding student learning in class, looking for causes to think slowly of students in learning problems in class, the influence of child interaction on truant effects at school, the influence of teaching methods on the absorptive capacity of children who have difficulty paying attention to classroom learning, effective ways that are used to generate student learning motivation, the influence of the quality of education on students' mathematics learning outcomes in the classroom and the development of mathematics learning media using mobile phones to increase student learning interest. The rest there are three scientific articles that are not feasible because there are still many that have to be revised to become eligible to compete at the faculty level.

As explained in the 2015 PKM Guidelines by Ocky Karna Radjasa, through PKM-AI it is expected to improve students' ability in expressing their thoughts and the results of scientific activities that have been carried out in the form of a scientific article according to the standard criteria of scientific journal writing. Through these skills, students can continuously describe a problem to encourage the need for a settlement effort or search for a solution with a specific purpose. Besides that, students are also able to choose techniques and the foundation of problem-solving methods accompanied by the ability to describe the theoretical basis associated with the issues discussed, and the sharpness of the discussion and analyzing the results obtained, which ultimately led to the conclusion of the efforts to resolve the problems that had been done. The following is an example of a student PKM proposal.

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PROPOSAL PROGRAM KREATIVITAS MAHASISWA

JUDUL PROGRAM

Pengembangan Media Pembelajaran Matematika Menggunakan Ponsel
untuk Meningkatkan Minat Belajar Siswa

SIDANG KEGLIATAN:
PKM - ARTIKEL ILMIAH

Dianalisa Oleh:	
Rizki Andini	4151111030 Angkatan 2015
Agnes Nurani	4141330001 Angkatan 2016
Rizki Pahlafi	4171000115 Angkatan 2017

PROGRAM STUDI PENDIDIKAN MATEMATIKA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS NEGERI SEMARANG
2018

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Figur 2. Student PKM Proposal

Figure 2 shows the results of student projects in making PKM. This PKM was developed based on the development of 6 KKNi tasks that have been given. Where all these tasks are in the KKNi-based textbook. This PKM is the final task that must be completed by students in the Mathematics Learning Evaluation course.

Textbooks are needed by students, not just one but more. Matthew found that most students get their textbooks using more than one source [15]. That is, the same as the KKNI-based textbook that is multi-source so that it can guide students in making a PKM [16-20].

4. Conclusion

From the explanation above, it can be concluded that the use/application of KKNI-based textbooks on Mathematics Learning Evaluation subjects can be a means of productivity of the Student Creativity Program at Mathematic Department Medan State University. It was shown with high learning motivation and good student activities and the completion of Students Creativity Program – Scientific Article, proposals by students. The suggestion for the next researcher is to be able to utilize this textbook as another means of Students Creativity Program productivity.

5. Acknowledgment

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