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STUDENT'S BOOK DEVELOPMENT FOR CRAFTS AND ENTREPRENEURSHIP SUBJECTS USES CREATIVE PROJECT-BASED LEARNING MODEL

*Miftahurrahmi[1], Usmeldi[2], Nurhasan Syah[3]

[1]Student of Master Program (S2) Technology and Vocational Education, University of Education, Indonesia
[2]Lecturer of Department of Electrical Engineering, Faculty of Engineering - University of Education, Indonesia
[3]Lecturer of Department of Civil Engineering, Faculty of Engineering - University of Education, Indonesia
*E-mail: always.miftahurrahmi@gmail.com

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ABSTRACT

This research purpose is to produce students' books For Crafts And Entrepreneurship Subjectswhich are valid, practical, and effective. The design uses the Development method with a 4D model. The subjects were students of class XI MIPA 4 as the control class and students of class XI MIPA 2 as the experimental class at SMAN 4 Padang. Based on the results, Student's Book Development For Crafts And Entrepreneurship Subjectsuses a valid, practical, and effective Creative Project-based Learning model to increase students' creativity. The student's book that was developed was validly reviewed by material experts and subject teachers. The developed student books are categorized as practical for use in the learning process obtained from the responses of teachers and students. The effectiveness can be seen from student learning activities, namely 92.02% in the category of many, the assessment of student skills with an average value of 87.62, and the assessment of student knowledge with an average assessment of 85.25 in the control class which is higher than the experimental class, which is 76, 41. So it can be concluded that the student's book for Crafts and Entrepreneurship Subjects uses a valid, practical, and effective Project-based learning model to increase students' creativity in learning.

Keywords: Student Books, Crafts and Entrepreneurship, Creative Project-based Learning

INTRODUCTION

Crafts and entrepreneurship are one of the scientific/scientific-based learning in the 2013 curriculum which is expected to enrich students' experiences and develop students' hard skills and soft skills. Mastery of the practical dimension to develop life skills (education of life) and build an independent life (education for earning living) is something that must be emphasized in the process of learning crafts and entrepreneurship. Based on the graduate standards and competency levels set by the Crafts and Entrepreneurship lessons, students are required to have the ability to think creatively to be able to achieve learning objectives. According to Setyo (2019), the ability to think creatively can be determined based on indicators of fluency, flexibility, originality/authenticity, and elaboration. Based on the results of the pretest conducted in XI MIPA 2 at SMAN 4 Padang with the craft production system material, the average results of the student creativity test were low. It was shown in creativity measurement on 71.5% in the high category in the fluency aspect, 63% in the high category in the originality aspect, 46% in the medium category in the flexibility aspect, and 29% in the low category in the

elaboration aspect.

Specific strategies should have been prepared by a teacher to maintain, support, and improve students' creative thinking skills. Utami et al (2014) argues that to improve the quality of learning, it is necessary to choose learning models and media that support the development of creative thinking skills. Project-based learning is one of the learning models suggested by the Ministry of Education and Culture that can increase creativity in Crafts and Entrepreneurship Subjects. The results of the research by Kadek and Nyoman (2019) stated that the application of the Project-Based Learning model in the subjects of Crafts and Entrepreneurship succeeded in improving student learning outcomes. Setyo (2019) also revealed that using the Project-Based Learning (PBL) method can improve learning creativity and student achievement in the subjects of Crafts and Entrepreneurship.

The creativity indicators integration in the Project-based Learning model into Creative Project-based Learning is an innovation that can be done to increase student creativity in Crafts and Entrepreneurship Subjects. The Creative Project-based Learning learning model is expected to be able to encourage students to express varied ideas and provide opportunities for students to try new things to develop aspects of fluency and flexibility skills. Creative products will be designed according to market needs through a series of investigation activities to develop aspects of originality skills. Students are then expected to be able to plan, prepare and present the ideas obtained in detail to develop aspects of elaboration skills.

The learning process using the Creative Project-based Learning model can be supported by using student books as learning media. It was a mandatory reference book used by teachers and students in the learning process in the 2013 curriculum that was ratified through the 71stRegulation of Minister of Education and Culture in 2013. Student books can be used as a means of supporting learning activities that can be used at home or school (Prasetyo et al, 2014).

Based on the questionnaire distributed to the students of SMAN 4 Padang, it was found that 90% needed other teaching resources for inspiration to design products. The cause was the student books circulating in the school are not focused on one area of expertise based on the availability of educators. Crafts and Entrepreneurship student books in the school environment are designed based on activities related to several real work areas, from crafts, technology, cultivation, and processing. It has not presented concrete examples of products in one area of expertise according to students. Existing student books still describe the minimum effort that students must make to achieve the expected competencies.

Based on the results of observations, it is necessary to develop student books on the subjects of Crafts and Entrepreneurship. Student books can be developed using the Creative Project-Based Learning model according to the demands of the curriculum. The development of student books on the subjects of Crafts and Entrepreneurship using the Creative Project-based Learning model aims to increase students' creativity.

METHODS

The type of research used is development research which aims to help teachers solve problems during the learning process. It examines systematically the designers, development, and evaluation of programs, processes, and learning products that must meet the criteria of validity, practicality, and effectiveness as needed in the field. The developed student book will be tested for validity and effectiveness through the stages of developing a 4D model with the stages of defining, designing, develop and disseminating. The

development of student books using the Creative Project-based learning model will later be tested on 39 students of class XI MIPA 4 as the control class and 40 students of class XI MIPA 2 as the experimental class.

RESULTS AND DISCUSSION

The aims of Student's Book Development For Crafts And Entrepreneurship Subjectsisto produce valid, practical, and effective student books on Crafts and Entrepreneurship Subjects. The book developed is a class XI student book that is focused on the craft sector. The student's book was developed using the stages of an integrated Project-based Learning model with creativity indicators.

1. Define

The results of observations at SMAN 4 Padang, students' books on Crafts and Entrepreneurship circulating at school have not been able to increase students' creativity. Even though they already have the books, 90% of students still need other teaching resources for inspiration to design products. The test subjects in this research were students of XI MIPA 2 at SMAN 4 Padang. The students' age in XI MIPA 2 is 18 years old. According to Piaget's learning theory, students aged 18 years are in the cognitive development stage of formal operations (Rohaendi & Laelasari, 2020).

Visuals and a clear and attractive book display will be more attractive to students. Students will be more interested in researching theory using books if the explanation is accompanied by visuals or pictures. The arrangement of the material must be unambiguous according to the needs of students and the applicable curriculum will make it easier for students to learn the books used. Assignments are given in the form of guided exercises using the stages of the Project-based Learning model that are integrated with creativity indicators. Assignments are designed to enhance students' creativity. The preparation of learning materials and objectives is by the KD and KI class XI which were designed by 719/P/2020 Regulation of Minister of Education and Culture according to the 2013 curriculum for Crafts and Entrepreneurship Subjects.

2. Design

Formative tests such as practice questions are in each learning material in the designed student books. The student book contains learning and presentation of the subject matter of Crafts and Entrepreneurship by the demands of the curriculum. The development of student books on the subjects of Crafts and Entrepreneurship will be made with the following specifications: 1) The book's size follows the ISO standard, namely B5 (176 mm x 250mm) with a tolerance of 0-11mm size differences; 2) Front and back cover layout view; 3) Font size > 14 pt for the cover, 12 pt for the content, and 10 pt for the description; 4) The typeface used in the content section is Times New Roman and Calibri (body) on the cover and special notes; 5) Use 1.5 spacing in each paragraph; 6) Using illustrations that are by the material in the Crafts and Entrepreneurship Subjects; 7) The anatomy of the book consists of a) the cover of the front book b) the front (preliminaries) of the book c) the textbook section d) the back of the book; 7) Design of learning based on creative project-based learning a) Formulating learning objectives and achievements b) Equating perceptions of learning materials c) Asking basic questions to improve fluency thinking skills d) Submission of project designs to improve original thinking skills (Originality) e) Develop project plans to improve flexible thinking skills (Flexibility) f) Prepare a project

timeline plan g) Monitoring project activities and continuation; and 8) The student book will be developed in electronic format (e-book) in a PDF file.

3. Develop

Student's book for Crafts and Entrepreneurship Subjects was developed to produce valid, practical, and effective student books by the K13 curriculum that applies during special conditions. The validity test was conducted to determine the feasibility of the student's book based on the assessment of material and media experts. Validation is done to get validation status from experts. The validation results were assessed by 4 experts including 2 FT Lecturers at the State University of Padang, 1 teacher at SMAN 4 Padang, and 1 teacher at SMA Adabiah Padang. The results of the validation can be seen in Table 1 below.

Table 1 Content validity and constructive validity of teaching material

No	Aspect	Nilai	Category
1	Content eligibility	0,8372	
2	Presentation	0,8708	
3	language	0,8708	Valid
4	Graphics	0,8576	
Average		0,8578	

Based on Table 1 shows that the average score of the validation assessment obtained from 4 experts is 0.8578 because the average assessment result is greater than 0.667 then the student's book is categorized as valid. The developed student book is considered valid because the book developed is by the standard criteria of book according to Hartini (2017) instrument validation is used as the basis for making revisions regarding the contents of the instrument in the form of writing, use of punctuation marks, use of foreign languages, structure/format, material/content, and language. According to Ismail et al (2021), teaching materials can be said to be valid because the components that underlie the manufacture of teaching materials and the linkage of all components (language, content feasibility, and graphics) in product development are by teaching materials. The practicality of students' books was obtained from practitioners' responses through a questionnaire. The practicality test consisted of teachers of Crafts and Entrepreneurship Subjects as well as students of class XI MIPA 2. The results of the practicality assessment of students' books on teacher responses can be seen in Table 2 below.

Table 2 Practical Results of Student Books Results of Teacher Responses

No	Student Book Practicality	%	Category
1	Ease of use	77,50	Very practical
2	The attraction of the dish	93,75	Very practical
3	Benefit	84,37	Very practical
Average		0,8578	84,61

The results of the student's response book practicality assessment can be seen in Table 3 below.

Table 3 Practical Results of Student Books Results of Student Responses

No	Student Book Practicality	%	Category
1	Ease of use	83,31	Very practical
2	The attraction of the dish	83,85	Very practical
3	Benefit	83,48	Very practical
Average		83,505	Very practical

Based on Tables 2 and 3, student books in the very practical category are used in the learning process because the student books developed to meet the practicality criteria according to Kamalasari (2019), teaching materials are arranged systematically and attractively including material content, methods, and evaluations that can be used independently. Hartini (2017) mentions that learning devices designed to adjust children's learning abilities with goals, time allocation, rewards, assignments, and assistance in the learning process are one of the learning strategies. The effectiveness of developing student books is seen from the learning activities, skills, and knowledge of students during learning. Observations were made on affective aspects which included the advantages and disadvantages of using student books using the Creative Project-Based Learning learning model. In summary, student learning activities can be seen in Table 4 below.

Table 4 Student Activity Analysis Results

No	Aspect	Learning activity	Category
1	Physical Activity	83,31	Very active
2	Mental Activity	83,85	Very active
3	Emotional Activity	83,48	Very active
Average		83,505	Very active

Based on Table 4, the developed student books have been effective in increasing student learning activities in the learning process because according to Yondriadi (2018) the project-based learning model makes students carry out the stages of activities according to the activity sheets that have been designed. Manggala & Nugraha (2021) stated that the project-based learning model made students more active because in learning they always included practice as a learning process. This product/project assessment measures students' ability to produce products, technology, and art that includes aspects of knowledge transfer, critical thinking, and creativity as well as problem-solving through an assessment rubric. In summary, the results of this product/project assessment measuring students' creativity abilities after using student books can be seen in Table 5 below.

Table 5 Student Skill Analysis Results

No	Aspect	Learning activity	Category
1	Practice planning	91,87	Very good
2	Process	84, 47	Very good
3	Practice Results	85,18	Very good
4	Practice Report	88, 95	Very good
Average		87,62	Very active

Based on Table 5. the developed student books are effective in improving students' skills in making craft products because according to Sari & Angreni (2018) the PjBL learning model can make students think creatively in designing craft products and increase students' creativity in their work. Octariani & Rambe (2020) Project based learning model

provides an opportunity for teachers to manage to learn in the classroom by involving project work. Application of Project work in the classroom challenges students to design, solve problems, make decisions, carry out investigative activities and provide opportunities for students to work independently. The effectiveness of the student's book is obtained from the provisions of learning outcomes based on the school's KKM and to see the difference between the control and experimental classes, the t-test is used. In summary, the results of the pretest and posttest can be seen in Table 6 below.

Table 6 Pretest and Posttest Results of Student Creativity Knowledge

	Pretest		*Posttest*	
	Experiment	Control	Experiment	Control
Total students	40	39	40	39
Average	52,37	47,69	85.25	76,41
Standart Deviasi	16,87	16,37	11,87	12,02
Classical completeness	7,50%	5,12%	90%	41,02%

Based on Table 6, the developed student books are effective in increasing students' knowledge of creative thinking because according to Sari et al (2019) the Project Based Learning (PjBL) learning model guides students to solve problems, make decisions, think critically and creatively, and can make learning more meaningful. Budi (2019) Project-based learning makes students explore, assess, interpret, synthesize and produce information in various forms of learning outcomes. The student's book is said to be effective in increasing students' knowledge to think creatively based on the t-test that has been done. In summary, the results of the experimental class and control class t-test are shown in Table 7 below.

Tabel 7 Experimental and Control Class Posttest T-Test Results

t-Test: Two-Sample Assuming Equal Variances	
Hypothesized Mean Difference	0
df	77
t Stat	3,29
P(T<=t) one-tail	0,00077
t Critical one-tail	1,66
P(T<=t) two-tail	0,00153
t Critical two-tail	1,99

Based on the results of the t-test analysis, it can be seen that there is a significant difference in the creative thinking knowledge of control class students and experimental class students. This difference occurs because according to Fauziah, et al (2018) students are allowed to make simple experiments that exist in everyday life by utilizing surrounding objects based on learning concepts. Making experiments by building creative thinking skills through case studies, making hypotheses, determining simple experiments, arranging schedules, designing tools and materials, conducting experiments, retrieving and processing data, conveying and discussing the results of data processing.

4. Disseminate

This stage is carried out to introduce student books developed in learning. The distribution of student books was given to students of class XI MIPA 7 at SMAN 4 Padang. Skills assessment in the form of the task of making handicraft products using

student books is given at this stage. The results of the assessment of product manufacturing skills can be seen in Table 8 below.

Tabel 8 Class Student Skills Assessment Results

No	Student Skills Score	Average value	Category
1	Practice planning	85,81	Very good
2	Process	94,59	Very good
3	Practice Results	89,18	Very good
4	Practice Report	87,16	Very good
Overall average		89,18	Very good

Based on Table 8, it can be seen that the average overall skill assessment of students reached 89.18 with a very good category. Knowledge assessment in the form of tests is also carried out at this stage. In summary, the results of the distribution class knowledge test can be seen in Table 9 below.

Tabel 9 Class Knowledge Test Results

No	KKM	**The number of students**	%
1	≥ 80	34	91,89
2	<80	3	8,11
	Jumlah	37	100

Based on Table 9, the classical mastery of the distribution class students reached 91%, this shows that classical mastery was achieved. Based on the data above, it can be concluded that the developed student books are effective in increasing students' knowledge even though there are still 3 people who are still not KKM.

CONCLUSION

The results of the validity test showed that the student's book for Crafts and Entrepreneurship Subjects developed was valid in terms of the feasibility of content, language, presentation, and graphics. The results of the practicality test of student books for Crafts and Entrepreneurship Subjects based on the teacher's response stated that student books were very practical to use from the aspect of the attractiveness of presentation, ease of use, and benefits obtained during independent learning. Based on the learning activities, skills, and knowledge of students in the classroom, it shows that the developed student books are effective in increasing students' learning activities, skills, and knowledge.

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