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DEVELOPMENT OF A STUDENT WORKSHEET ON MEGIBUNG TRADITION MATERIAL BASED ON PROJECT-BASED LEARNING IN THE CULINARY ARTS VOCATIONAL EDUCATION STUDY PROGRAM

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Abstract. This research aims to describe the student responses to the developed Student Worksheets on Megibung Tradition material in the Balinese Culinary course. It employs a type of development research intended to develop Student Worksheets for Balinese Culinary courses. The subjects of this study were third-semester students of Culinary Arts Vocational Education FTK Undiksha. The selection of these subjects is based on the urgency of providing Balinese Culinary teaching materials, researchers' role as lecturers, and research respondents. This research instrument is an assessment format consisting of aspects related to (1) material/concept, (2) construction, and (3) technical elements. The results showed that: (1) there are two stages in developing Student Worksheets, namely the preparation stage and the development stage. (2) A feasibility analysis indicated that the use of Student Worksheets with a project-based learning approach is suitable for learning and can enhance student creativity, specifically in the Balinese Culinary course for the ability to serve food with Megibung. (3) After making improvements based on expert validation, student response measurements were taken as users of this Student Worksheet. In general, the results of the student response questionnaire were summarized as follows: 75% of students rated this Student Worksheet as good, 10% gave a moderate response, and 10% gave a very good response.

INTRODUCTION

The development of teaching materials is regarded as a strategic issue and forms part of the master plan for the development of learning research in higher education, there is still research on the development of teaching materials. The focus of this work is on creating student worksheets that are needed for practicum courses, requiring students to engage in instructional activities (Barlenti et al., 2017). Practical teaching materials in the form of Student Worksheets in the limited Balinese culinary course encourage the need to develop project-based teaching materials by using local materials as practicum materials. In addition, Student Worksheets are generally a summary of the materials (Wardani & Sari, 2021; Sukendra et al., 2024). The use of local materials in the environment around students will have the potential to develop student creativity.

Students' creativity is linked to their ability to think divergently (Widana & Ratnaya, 2021). Divergent thinking is the ability to think from a single problem to a variety of solutions or ideas . Student creativity related to creative thinking skills can make students imaginative, and divergent, and provide many ideas for solving problems. Student creativity must be developed through theoretical and practical lectures. The ability to think creatively and critically is crucial for students both at school and for students' lives in the future (Irdalisa, et al., 2022). This is in line with the statements conveyed by Ulandari et al. (2019) and Salwah et al. (2024) that the ability to think creatively can generate new ideas, concepts, methods, and approaches to solve problems directly in everyday life. Enhancing students' creative thinking as one aspect of 21st-century skills can be accommodated by using Student Worksheets .

The development of teaching materials in the form of Student Worksheets is required in practical courses, which require students to do something instructional. Project-based practicum teaching materials require students to increase their creativity in each practicum topic (Assalma et al., 2013). The limitations of practicum teaching materials in the form of Student Worksheets in Balinese culinary courses highlight the need to develop project-based teaching materials using local Balinese food as practicum material. Given that Student Worksheets are concise, they rarely utilize local potential as practicum material (Nelson & Tarigan, 2022).

In the practicum process, students are expected to apply skills and practice specific task. To support practicum activities, a practicum guidebook is needed, which includes theoretical information useful for these activities. The practicum guidebook explains the materials and tools used in the practicum, as well as the work steps. The Student Worksheet is one of the practicum guides that contains practical steps to be followed by students to help solve problems (Martahayu & Yuanita, 2022 ; Silalahi, 2022). The use of worksheets for students is considered effective and efficient in learning activities to improve learning outcomes (Krismona & Sujana, 2021; Nurmi, et al., 2020). These Student Worksheets can be combined with the Project-Based Learning model.

In general, project-based learning takes three stages: project planning, project implementation, and project evaluation. This is in line with previous research, which shows that project-based learning can improve student learning outcomes, increase learning activities, motivate students to learn, and foster higher cooperation between students (Panjaitan, et al., 2020). The development of PjBL-based learning improves learning activities and, the quality of learning processes, and can also enhance student creativity (Roas, et al., 2024; Tarigan & Latief, 2022; Wahyuni et al., 2020).

This research aims to develop Student Worksheets for the practicum course on Balinese Culinary based on project-based learning using local Balinese materials to support appropriate teaching materials and improve students' critical thinking skills.

METHOD

This type of research is development research, using the 4D model consisting of *define, design, develop, and disseminate* which refers to Thiagarajan, et al. (1974). However, in this study the development of student worksheets was carried out only up to the *development* stage, and the *disseminate* stage was not performed. The subjects in this study were students

of the Culinary Arts Vocational Education study program, Faculty of Engineering and Vocational Studies. The object of this research is the Student Worksheet based on Project Based Learning (PjBL) . The developed Student Worksheets were tested on students of the Culinary Arts Vocational Education study program, Faculty of Engineering and Vocational Studies with heterogeneous abilities. The research location for the implementation of the Student Worksheet trial was the Culinary Arts Vocational Education S1 Study Program.

This research involved various parties, including material experts, design experts, and students. There are three types of data collection techniques, (1) Walkthrough conducted at the Expert Review and one-to-one stages. (2) Interviews conducted at the analysis stage. 3). Questionnaires were conducted at the expert review, one-to-one, and small group stages. Validation of the Student Worksheets was conducted by material expert lecturers and design expert lecturers to determine the theoretical feasibility of the Student Worksheets. In addition, practicality was assessed based on observations of student activities during learning with the Student Worksheets. Observation activities are also carried out when students work on projects with the theme of serving food 'Megibung'. Another technique used was the student response questionnaire. Data analysis methods included reviewing the developed Student Worksheets, analyzing the implementation of activities and Student Worksheets, and analyzing the results of student responses. The questionnaire was created using a Likert scale, which consisted of 4 items, namely Strongly Agree (SS), Agree (S), Disagree (TS), and Strongly Disagree (STS).

Table 1. Likert Scale for Assessment

Alternatif Jawaban	**Bobot Skor**
Sangat setuju	4
Setuju	3
Tidak setuju	2
Sangat tidak setuju	1

(Sugiyono, 2016)

Sbi = Ideal standard deviation
Mi = 0.5 (ideal maximum score + ideal minimum score)
Sbi = 1/6 (Ideal score – ideal minimum score)

Meanwhile, student responses to the use of Student Worksheets based on Project-Based Learning were analyzed using the following formula:
Average Score = Gain Score (R)
R = Average score
N = Number of respondents
The score obtained from the formula above is then interpreted using Table 2.

Table 2. Reference of Interpretation

Intervals Score Results Evaluation	**Interpretation**
Mi + 1.5 Sbi < X	Very Good
Mi + 0.5 Sbi < X ≤ Mi + 1.5 Sbi	Good
Mi - 0.5 Sbi < X ≤ Mi + 0.5 Sbi	Enough
Mi - 1.5 Sbi < X ≤ Mi - 0.5 Sbi	Not enough
X ≤ Mi -1.5 Sbi	Very Not enough

RESULTS AND DISCUSSION

This Student Worksheet with a project-based learning approach is a student activity sheet that contains project tasks. The project presents the concept of Balinese culinary learning, based on local Balinese ingredients. This Student Worksheet includes three units of mirror project-making activities and consists of the following components: (a) Competency Standards, (b) Basic Competencies, (c) Indicators, (d) Assessment rubric, (e) Title, (f) Objectives, (g) Literature Review, (h) Tools and Materials, (i) Methods, (j) Observation Results, (k) Discussion. This is in accordance with previous research, which states that Student Worksheets should include titles, basic competencies to be achieved, tools and materials needed to complete tasks, work steps, and student reports. The presentation of Student Worksheets in accordance with the project-based learning approach is to provide opportunities for students to actively engage in project creation. This Student Worksheet allows educators to manage classroom learning by involving project work. Project work contains complex tasks based on significant questions and problems that are challenging, and require learners to design, solve problems, make decisions, conduct investigations, and provide opportunities for learners to work independently. The goal is to help participants develop independence in completing the tasks they face (Kusumawardhani & Raharjo, 2019).

Through project-making activities, student activity and creativity can be stimulated, make learning less monotonous and more engaging. Learning becomes more meaningful because students are faced with real situations, which enhances their problem-solving skills. Student Worksheets developed using the Project-Based Learning approach can be effectively applied as teaching materials, making learning more interesting and engaging, and ensuring that the essence of learning is more contextual (Mispandi & Mulyani, 2020). The steps for creating projects use language that is easily understood by students and includes examples of illustrations, image layout, and presentation of "megibung" to ensure clarity in completing the project.

The feasibility of a Student Worksheet can be assessed using feedback from Expert Validators and User Validators. Feasibility data were obtained through a limited-scale trial on Culinary Arts Vocational Education Study Program Lecturers, using a feasibility questionnaire. This questionnaire consists of three aspects: content (didactic), language (construction), and presentation (technical) (see Table 3).

Table 3. Results Test Appropriateness Serving

Aspect	Score (%)	Criteria
Fill (didactic)	75.75	Very worthy
Language (construction)	72.75	Worthy
Presentation(technical)	73.22	Worthy
Graphics	73.21	Worthy
Average score	73.73	Worthy

Table 3 shows the percentage feasibility for content, language, presentation and graphic as 75.75%, 72.75%, 73.22%, and 73.21% respectively. These results align with Haviz (2013), who states that the first aspect that determines the quality of a learning product is validity. These results indicate that Student Worksheets with a *project-based learning* approach meet

the criteria for feasible use as student learning media. However, improvements are needed in several aspects to achieve the 'Very Worthy' criteria.

Readability refers to the presentation of content to bring up natural and normal reading activities (Kurnia, 2015). According to the criteria, the level of presentation with a *project-based learning* approach using Student Worksheets is easily understood by students. The content score indicates a fairly high criterion, suggesting that the Student Worksheet with a *project-based learning* approach is easy to comprehend. This is because the Student Worksheet material is presented using language appropriate to the student's abilities, is easy to understand, and has a clear sentence structure. Consistent with previous research, it is evident that readability is influenced by both language and visual factors. The Writing employs a type and size that are adjusted typography, including font type and size, line density, and other layout considerations.

Overall, the Student Worksheet based on Project Based Learning that has been tested is declared to fulfill the required components and is suitable for use as a study guide. A textbook must meet four components to be considered suitable for use: 1) feasibility of content, 2) presentation feasibility, 3) language feasibility, 4) graphics (Permendiknas, 2007).

Student Worksheets are one of the learning resources that can develop students' critical thinking skills in learning. They are sheets that contain guidelines for students to carry out learning activities to develop concepts and add information (Hidayati & Khasanah, 2020). Student Worksheets are tools for directing student learning activities. The components in the Student Worksheet must also be clear, including title, time allocation, learning objectives, a summary of essential material, and procedures for learning activities that must be carried out .

CONCLUSION

Based on the results of the trials that have been carried out, the results show that the use of Student Worksheets with a *project-based learning* approach is feasible for use in learning. The use of Student Worksheets with a project-based learning approach has a good level of suitability and a positive response from students in the Balinese Culinary course on the competency of serving food with Megibung.

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