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Electronic Student Worksheets Based on Project-Based LearningIntegrated with Local Wisdom in Social Science Subjects As a Form of Implementation of Creative Pedagogy Learning in Elementary School

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Abstract

Students' understanding of local culture is still limited, although there is actually a lot of potential for local culture that can be integrated into learning. This study aims to determine the validity and attractiveness of Electronic Students Worksheets teaching materials based on Project Learning integrated with Sumenep local wisdom in learning IPAS social studies content as a form of implementing creative pedagogy at SDN Parsanga II. This study was motivated by the lack of interesting teaching materials used in the classroom and the potential for integrating the concept of Sumenep local wisdom values in learning to present learning oriented towards students' creative behavior. This research was conducted at SDN Parsanga II, and the research subject was grade V students. This research uses the research and development (RnD) method of the 4-D model through the stages of defining, designing, developing, and distributing products. Data were collected through observation, interview, and questionnaire techniques. The results showed that the electronic student worksheets teaching material products developed were declared valid through the percentage of the average value of expert validators of 97.49% with a very valid category and the percentage of the average value of teacher and student response questionnaires of 94.96% with a very attractive category. Based on these results, it can be concluded that the Project Learning-based electronic students worksheets teaching materials integrated with local wisdom Sumenep are valid and interesting to use in helping the learning process of social studies content of cultural heritage material for grade V students of SDN Parsanga II.

Keywords: electronic students worksheets; local wisdom; project-based learning

Introduction

Education is a deliberate and systematic process to create an optimal learning environment so that students can develop all their potential to the fullest (Mitsea et al., 2022). In addition, education acts as one of the main vocals in human life that must be fulfilled to help humans face the challenges of changing times with its role to boost the competence of an individual through the process of training, expansion, and tips in educating (Ansori, 2015). Quality education can also be used as a measure of the progress of a nation (Chankseliani et al., 2021). Therefore, the world of education should be able to shape the attitudes and abilities of students who are useful for themselves and their environment (Mohd Basar et al., 2021). The success in the process of implementing-

education continues to be pursued by the government, one of which is by developing a curriculum that is applied to each educational institution. The curriculum developed and implemented nationally in Indonesia is the Merdeka Curriculum (Pratikno et al., 2022). The role of the Merdeka curriculum as a national curriculum is to present learning that focuses on optimizing the learning experience of students and is effective in fostering spiritual attitudes and nationalism so as to create learners with Pancasila (Wahyudin et al., 2024).

The subjects in the Implementation of the Merdeka Curriculum are focused according to the essential study subjects in each subject that were previously integrated into one learning theme in the 2013 curriculum (Wicaksana & Rachman, 2018). The difference lies in the integration of science and social studies content subjects into one integrated subject, namely IPAS (Zakarina & Ramadya, 2024). The integration of the two science contents is based on the outcome that students are able to construct their knowledge of science and society comprehensively and holistically so that, with their competence, they have the capability to empower their natural and social environment (Wijayanti, Inggit Dyaning & Ekantini, 2023)

The implementation of IPAS in elementary schools is very important to form students' basic understanding of the world around them. IPAS makes a great contribution to cognitive development, critical thinking skills, and understanding of human interaction with the environment (Komariah et al., 2023). In line with this, learning needs to be designed through a contextual approach to facilitate students' understanding of the knowledge around them. To facilitate the implementation of contextual learning, it is necessary to present local cultural materials for students. Local Culture provides deeper insight and relevance to the context around students (Asfahani et al., 2023). By integrating local culture into the learning materials of IPAS, students can connect theory with the reality of their lives, introduce the life and culture around them, and strengthen cultural identity and social awareness.

The IPS learning process in IPAS must be carefully designed, pay attention to students' individual learning needs, and utilize the potential in the school environment, such as natural resources, local culture, or current social issues (Sutomo, 2022). In conceptualizing a learning design, educators must be able to identify learning methods to be used, learning models to be applied, and learning approaches to be applied and then

adjusted to the classroom ecosystem, relevance to teaching materials, and learning objectives to be achieved in one learning process (Friskawati & Sobarna, 2019). Broadly speaking, educators must be able to present the stages of the learning process for students systematically to avoid mistakes or failures in achieving learning objectives (Susanto, 2019). Therefore, in carrying out the learning process, educators should be assisted by using methods and teaching materials that are able to create an active, creative, and fun learning atmosphere (Hsbollah, H. M., & Hassan, 2022). For this reason, educators can apply a student-centered approach by developing teaching materials that can present learning sequences systematically and provide opportunities for students to think critically in solving problems related to teaching material, one of which is by using student worksheets (Pane et al., 2022).

Students' worksheets are one type of teaching material that teachers can use in learning. Student worksheets are teaching material in the form of worksheets/activities for students to carry out the learning process. They contain a description of the main teaching material, objectives, guidelines for use, and work steps and are equipped with exercises to assist students in achieving learning objectives (Kosasih, 2020). Student worksheets are designed to optimize the construction process of students' understanding of the material studied through systematic work steps. The importance of E-LKPD based on local wisdom helps students connect what they learn in school with the local culture and real life around them. Of course, this also makes learning more interesting and contextual. Students easily understand the content of the material learned through the introduction to students' daily lives. In addition, the presentation of local culture in E-LKPD introduces students to regional cultural values and traditions so that students get to know and understand the cultural richness around them, as well as appreciate and preserve them for future generations. The potential of schools in Sumenep, which requires schools to organize culture-based activities in schools through extracurricular and extracurricular activities, strongly supports the realization of local culture-based learning presented through E-LKPD teaching materials. The presence of students' worksheets in this electronic format is able to present teaching materials that are efficient and practical in providing exercises and efforts to construct understanding and even to explore students' creative ideas in solving problems that are relevant to the material they are learning (Puspita & Dewi, 2021). It is no less important to develop teaching materials, both

students' worksheets and electronic students worksheets, which is the process of aligning the learning model used with the learning material and the characteristics of students to the work steps in the teaching materials (Pradiptha & Wiarta, 2021). This is done so that the process of achieving learning objectives using electronic student worksheets and teaching materials by applying relevant learning models can facilitate the process of optimizing the actualization of the learning objectives themselves (Kusuma, I Dewa Putu Satria Jaya & Wiarta, 2022).

However, the facts that occur in the field prove that the use of electronic student worksheets is still rare. If possible, the electronic student worksheets usually contain only a summary of the material with questions that are designed to be less interesting. Based on the results of pre-research conducted at SDN Parsanga II class V, researchers found that educators had not developed their own electronic student worksheets teaching materials. Educators only take templates in the Canva application but have not developed them according to the needs of students. Based on the results of the observations, researchers found the potential of learning infrastructure, but it has not been used optimally. In each class at SDN Parsanga II, including in-classroom V, there are facilities in the form of smart TVs to support the learning process in class, but they are only used to display learning videos accessed via YouTube. Furthermore, researchers also found the advantages of the local potential of the students' area that have not been integrated into the learning process, especially in the social studies content, namely the existence of extracurricular kara witan Sumenep. The process of integrating local wisdom values into the learning process can instill positive character values based on local wisdom values for students. The next problem lies in the implementation of the learning model. In the observation activities, researchers observed the learning activities of the IPAS subject. The model used in the learning is the project-based learning (PjBL) model. In its application in the classroom, the PjBL model is not adjusted to the syntax that should be implemented if the model is applied. Based on the results of the interviews, educators find it difficult to minimize the time required to complete projects in social studies IPAS subjects. In fact, the learning process that applies the PjBL learning model with systematic learning steps will present active learning and foster student creativity. Therefore, there is a need for Students' Worksheets in electronic format (electronic students worksheets) that can accommodate the needs and potential of the learning environment of students by

using a project-based learning model and integrating local wisdom with the teaching material.

Electronic student worksheets are one type of teaching material in the form of worksheets for students presented in electronic format. Electronic student worksheets that are developed according to the needs of students and pay attention to the achievement of learning objectives can present a more effective learning process (Suryaningsih & Nurlita, 2021). Learning IPAS social studies content by using electronic student worksheets as teaching material is expected to be able to help students understand learning material and achieve learning objectives and improved learning outcomes (Pane et al., 2022). Some of the benefits of using electronic student worksheets in learning are making learning more flexible with students who are easy to access teaching materials (Rani Nurafriani & Mulyawati, 2023), fostering students' interest in learning because students can use varied features in learning the concept of IPS content IPAS material (Herlina et al., 2023), and making it easier for educators to present teaching materials. Educators can monitor the development of students' understanding of the material taught through electronic student worksheets.

In addition, the process of integrating local wisdom values with the concept of social studies content IPAS material will provide meaningful and contextual learning experiences for students and allow for a process of direct interaction with their social environment (Kosasih, 2020). The integration of local wisdom values in the learners' area with the concept of material and learning activities in social studies content will help improve participants' understanding through contextual matters and close to themselves, the habits of the surrounding community, and the potential of their area (Handayani et al., 2023). The process of integrating the value of local wisdom can be done by including elements of local wisdom in teaching materials used to teach social studies content material, such as electronic student worksheets. The addition of information, images, and values from the local wisdom of the learner's area in teaching materials can be used as a learning resource so as to present a factual learning experience (Pane et al., 2022). The choice of learning model to be used in the development of electronic student worksheets also has a role in helping students achieve learning objectives. One uses the project-based learning model (PjBL). The project-based learning model is one of the learning models that are relevant to the actualization of creative pedagogy learning in the classroom.

Creative pedagogy-based learning can be interpreted as an imaginative and innovative learning process with the application of learning strategies that are oriented toward improving students' creative thinking skills (Supriatna & Maulidah, 2020). Learning social studies content with a project-based approach can foster students‘ interest in learning through the process of determining projects that are relevant to the problem and contextual, interesting, and fun in students’ daily lives (Suhelayanti et al., 2023). The application of the PjBL learning model in learning social studies content material assisted by electronic student worksheets and teaching materials integrated with local wisdom, if implemented properly, will provide opportunities for students to train critical thinking and analysis skills, collaborate with others, communication, creative and innovative thinking (Halimah & Marwati, 2022).

Some relevant research on the use of electronic student worksheets and teaching materials in learning shows an increase in learning outcomes with an average score of 80.49 and enthusiastic interest in learning (Mispa et al., 2022). Another study showed that the use of electronic student worksheets in the IPAS learning process was able to improve students' creative thinking skills, with an average student response of 86.4% in terms of interest, motivation, and student responses (Nirmala et al., 2023). In addition, the results of the study also explained that the existence of varied features and the process of sending answers to the results of students' electronic student's worksheets work, which are automatically sent to the educator's e-mail, make the use of this teaching material very effective (Lathifah et al., 2021). The utilization of project-based electronic student worksheets integrated with local wisdom is able to present a contextualized learning experience for students and assist them in achieving learning objectives (Omanda et al., 2023). However, the developed product must be proven valid and attractive if it is implemented in learning. Therefore, this study aims to determine the validity and attractiveness of electronic student worksheets teaching material products based on Project Learning integrated with local wisdom to help students understand and gain meaningful learning experiences of IPS content.

Research Methods

This research uses the Research and Development (R&D) method to develop teaching materials in the form of electronic student worksheets. Research and development methods can be defined as scientific tips used to conduct systematic research, starting from the stages of researching, designing, producing, and validating the products developed (Sugiyono, 2020). In the pedagogic domain, research and development methods can be interpreted as a research process used to develop products in the field of education that are valid (Slamet, 2022). The research and development model used to develop this product is the 4-D (Four-D) model by Sivasailam Thiagarajan with the define, design, develop, and disseminate stages (Thiagarajan et al., 1976). The selection of this model is appropriate for use in developing learning devices in the form of teaching materials with holistic research.

The stages in developing interactive electronic student worksheets and teaching materials are as follows. 1) The define stage consists of curriculum analysis, learner needs analysis, and material and task analysis. 2) The design stage starts with determining the material, selecting teaching materials, determining the format, and designing the initial prototype of electronic student worksheet teaching materials. 3) The development stage, where the product, after the design stage, will be developed by conducting product tests on experts and trials on target users. Stage 4) disseminate, which is to distribute the product on a limited scale in schools with the aim of providing an interpretation of the product in its readiness to be distributed on a wider scale.

This research was conducted at SDN Parsanga II Sumenep with research subjects in class V students, totaling 25 students. The selection of this subject is based on the relevance of the material on understanding cultural heritage based on local wisdom values in grade V, the limitations of teaching materials used in teaching and integrating the concept of regional local wisdom values in teaching materials, and the potential of the learning environment of students. The test subjects consisted of 25 learners for the field trial. The test subjects were carried out by purposive sampling by considering the characteristics and potential of students relevant to product development. The trial was conducted at the product validation stage (internal trial), and field trials were conducted to measure the product's attractiveness. Researchers did not continue the research at the effectiveness test stage due to time constraints and the distance to the research location.

Data was collected using interviews, observation, and questionnaire techniques. The interview technique was used to collect information about the implementation of learning through questions to the homeroom teacher and principal of SDN Parsanga II. The observation technique was carried out to obtain definite and factual data related to research needs (Sugiyono, 2020). Observations were made to obtain data on the activities of educators and students. Furthermore, the data collection method through questionnaires was carried out by distributing questionnaires both at the validation and trial stages (Waruwu, 2024). Questionnaires in this electronic student worksheet development research were given to expert validators to measure the validity of the products developed and distributed to educators and students to find out the response of product users after the product was tested to measure the attractiveness of the products developed. This study used instruments such as observation sheets and questionnaire sheets. The observation sheet contains a sequence of activities of educators and students based on the learning syntax presented. Meanwhile, the questionnaire sheet contains several questions and is equipped with a questionnaire grid for the product validation test. The product validity test table is presented with an open statement table for the validator as a place to provide feedback on the tested product. The following is a grid of data collection instruments used by researchers to collect data.

Table 1
Interview Grid Table

No.	Aspect	Question Number
1	Curriculum Implementation	1-11
2	Classroom Learning Practices	12-22
3	Teaching materials used	23-34
4	Digital media used	35-37
5	Implementation of cultural literacy, digital and local wisdom	38-47

Source: Researcher, 2024

Table 2
Teaching Material Validation Questionnaire Lattice

No.	Aspect	Question Number
1	Completeness of electronic students' worksheets	1, 2, 3
2	Efficiency of the developed electronic student's worksheets	4, 5, 6
3	Ease of understanding electronic students' worksheets during learning	7, 8, 9,10
4	Suitability of learning steps with test instruments	11, 12
5	Use of language	13, 14, 15

Source: Researcher, 2024

Table 3
Learning Design Validation Questionnaire Lattice

No.	Aspect	Question Number
1	Completeness and orderliness of teaching module components	1, 2, 3,
2	Appropriateness of learning objectives	4, 5, 6
3	Appropriateness of learning activities	7, 8, 9, 10, 11
4	Test instrument	12, 13
5	Assessment	14, 15

Source: Researcher, 2024

Table 4
Material Validation Questionnaire Lattice

No.	Aspect	Question Number
1	Suitability of material to the curriculum	1, 2, 3
2	Suitability of material with learning activities	4, 5, 6, 7
3	Appropriateness of time allocation	8
4	Completeness of material in electronic students' worksheets	9, 10, 11
5	Suitability of the material to the characteristics and needs of students	12, 13, 14
6	Consistency of material with the subject matter	15
7	Drafting concept	16, 17, 18
8	Language used	19, 20

Source: Researcher, 2024

Table 5
Teacher And Learner Response Questionnaire Grids

No.	Type Of Questionnaire Sheet	Aspect	Question Number
1	Teacher response questionnaire	Efficiency of electronic students' worksheets Use	1, 2, 11, 14
2		Display of electronic students' worksheets	4, 12, 13
3		Information conveyed	3, 5
4		Impact of using electronic student worksheets	6, 7, 8, 9
5		Can motivate the teacher	10
6		Language Component	15
7	Student response questionnaire	Appeal to the appearance of electronic students' worksheets	1
8		Attractiveness of the use of electronic student worksheets	4, 5, 6, 7
9		The impact of using electronic student worksheets on learning	8, 9
10		Ease of use of electronic students' worksheets	2, 3

Source: Researcher, 2024

Table 6
Observation Sheet Grids

No.	Type Of Observation Sheet	Aspect	Question Number
1	Teacher's observation sheet	Use of electronic student worksheets	1, 2, 3, 4, 5, 6, 12, 13
2		Project-Based Learning in Electronic Students Worksheets	7 & 8
3		Linkage of Madura Sumenep's local Wisdom in electronic students worksheets	9, 10, 11
4	Students' observation sheet	Use of electronic student worksheets	1, 2, 3, 4, 5, 6, 12, 13
5		Project-Based Learning in Electronic Students Worksheets	7 & 8
6		Linkage of Madura Sumenep's local Wisdom in electronic students worksheets	9, 10, 11

Source: Researcher, 2024

The data in this study were analyzed using quantitative descriptive techniques. The analysis of the validity of the electronic student worksheets was carried out using descriptive statistical methods with the interpretation of the weighted scores given by the validators related to the validity of the product in the form of a questionnaire assessment and then analyzed the formula: $V_{ah} = \frac{T_s}{T_{sh}} x100\%$ While the data to measure the attractiveness of the product is generated through the process of analyzing the data from the teacher and learner response questionnaires distributed after learning using electronic students worksheets teaching materials is complete.

Result

Define Stages

The initial stage carried out in the research and development of electronic student worksheets teaching materials is the defining stage, which analyzes the initial needs of students through interviews with teachers and principals, observing learning activities, and distributing questionnaires about students' needs. Here are some stages in this development model, among others:

Curriculum Analysis

Curriculum analysis plays a crucial role in determining the focus of teaching material development. By deeply examining the competencies contained in the curriculum, we can select the core competencies that need to be prioritised in making

teaching materials. This selection is based on considerations of limited resources, relevance to the needs of students, and the demands of the times (Muqdamien et al., 2021). In addition, this analysis was conducted to find out the curriculum implemented at SDN Parsanga II. At this stage, researchers conducted interview activities with homerooms and principals to obtain information about the implementation of Merdeka Curriculum at school. In addition, researchers also collect data by analysing the Learning Outcomes (CP), Learning Objectives (TP), and Flow of Learning Objectives (ATP) that will be achieved in developing teaching materials.

Learner Needs Analysis

Conducted by observing IPAS learning activities in the classroom and distributing needs questionnaires to students to obtain data in the form of characteristics and interests of students that can be used as a basis for consideration in developing teaching materials in the form of electronic student worksheets. Through a deep understanding of the problems faced, clear and measurable general learning objectives will be formulated. These general objectives will be a reference in determining the competencies that must be mastered by students after completing the learning program so that they can overcome the problems that have been identified (Slamet, 2022). In addition, the data obtained is used as the basis for determining projects in learning to increase the creativity of students (Rohana & Wahyudin, 2017). Project-based learning is considered effective in helping students understand learning through the completion of projects that are relevant to the teaching material. The project-based learning model can also be integrated with the concept of local wisdom to present contextualized learning for students (Febrianty et al., 2023). This proves that researchers feel the need to develop teaching materials presented in the format of electronic student worksheets based on Project Learning integrated with Sumenep local wisdom. The following is a graph of the results of the learner needs questionnaire on learner interests and tendencies in learning.

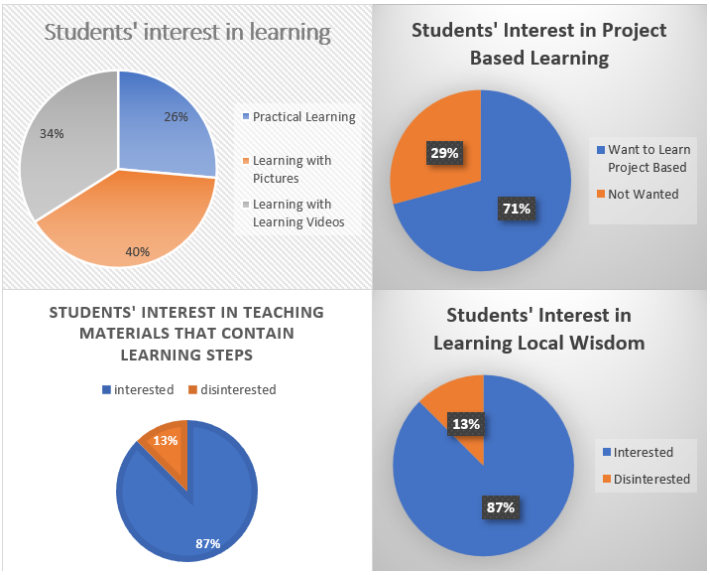


Figure 1
Learner Needs Analysis Chart
Source: Researcher, 2024

Task and Material Analysis

Carried out by developing tasks, including projects, will be integrated into Project Learning-based teaching materials integrated with Madura Sumenep's local wisdom. Tasks and projects are analyzed and then given to students through the teaching materials developed to assist students in achieving competencies at the meeting (Waruwu, 2024). This will present the relevance of systematic learning activities to the learning outcomes to be achieved by learners (Indarta et al., 2022). In addition, in determining tasks and projects, researchers also analyze the material to be taught, including CP, material, and achievement indicators.

Table 7
Material Analysis Results

Aspects analysed	**Description**
Learning Outcomes (CP)	Learners understand the diversity of national cultures based on local wisdom values that apply in their region.
Content	Cultural heritage and local wisdom values
Phase/Class	C/ Grade V
Subject	Science and social studies
Indicators	1. Learners are able to explain the meaning of local wisdom 2. Learners are able to pair examples of local wisdom with its type 3. Learners are able to analyze the value of local wisdom in their neighborhood 4. Learners can give suggestions in an effort to preserve the local wisdom of their region

Aspects analysed	Description
	5. Learners are able to carry out a project on efforts to preserve local wisdom 6. Learners are able to present the project results 7. Learners are able to evaluate the project results among each other
Project	The project is determined based on the learners' thinking when solving problems that occur in their local wisdom.

Source: Researcher

Design Stages

The next stage is the design stage. The results of product definition in the first stage will be continued in the design of teaching material products in the form of electronic student worksheets, including the stages: 1) preparation of tests to be given to students; 2) selection of teaching materials to be developed to assist the learning process, which in this case the selected teaching materials are in the form of electronic students worksheets; 3) determination of the format consisting of determining the layout of the material, the font to be used, color variations for visualization, and the sequence of activities in learning that will be taught to students, and; 4) designing initial products before being tested in order to get revisions and validation at the product validation stage. The local wisdom developed in this E-LKPD consists of the local wisdom of Topèng Dhâlâng dance tradition, nyadran ceremony, and ul daul traditional music. The value of life that can be taken from the topeng dealing tradition is that the success of every human being depends on the efforts he makes to get closer to the Almighty. Furthermore, the Adhât Nyadhâr Ceremony is a ceremony performed by the Sumenep community for the discovery of salt as a potential commodity on the island of Madura. The value that can be taken is that every human being must be grateful for all gifts from the Almighty. As a student, you must also be thankful for the blessings of knowledge and the opportunity to go to school to achieve your goals (Qodariyah & Wahed, 2019). In addition, Ul-Daul/Tong-tong Tradition Music is a traditional performance that combines various Madurese musical instruments and is played in unison to perform Madurese folk songs. The value that can be taken is that in everyday life, we as social beings must live in harmony with each other in diversity, not choose friends, and always be united and help each other. These three types of local wisdom are very relevant to be integrated into IPAS learning, especially in the learning outcomes of Understanding National Cultural Diversity through regional local wisdom values so that students can recognize and

preserve the surrounding culture. The following is the initial product design of teaching materials in Figure 2.

Figure 2
Electronic Students Worksheets Teaching Material Design
Source: Personal Document

Figure 3
Tong-tong Traditional Music
Source: Personal Document

Figure 4
Nyadhâr Ceremonies
Source: Personal Document

Figure 3
Topèng Dhâlâng
Source: Personal Document

Development Stages

After the initial product design process, the product enters the development stage, where the product will be validated by expert validators and tested (Siswoyo et al., 2023). Systematic research tips are carried out at this stage. Namely, products that have gone through the design stage will be validated by experts and then will go through a revision stage for product trials on target users (Daniar et al., 2022). Product validation was carried out by three expert validators, namely the learning design expert validator, a teaching material expert, and a material expert.

Table 8
Product Development Results

Teaching Material Component	Description
Electronic Students Worksheets Cover	This section includes the title of the teaching material, the developer's identity, and images oriented to the learning material.
Foreword	It contains the developer's expectations for the product developed
Table of Contents	Contains pages of the main parts of the developed teaching materials

Teaching Material Component	Description
Pancasila Learner Profile	Contains five profiles of ideal Indonesian students
Instructions for use	Contains directions on the use of teaching materials in the form of both activity instructions and command sentences.
Learning Outcomes (CP), Learning Objectives (TP), and Flow of Learning Objectives (ATP)	Presents the competencies that must be achieved by students after using the electronic student's worksheets
The flow of learning activities	Presents work steps in learning that are in accordance with the syntax of project-based learning models and practice questions, which are integrated with the local wisdom of Sumenep Madura.
Reflection and Evaluation	Contains evaluation questions to determine the extent of students' understanding of the material after using electronic student worksheets
Glossary	Contains the meaning of difficult words to help students understand reading material
Bibliography	Contains a list of references that are used as references in developing teaching material products
Developer Profile	Presents a brief biography of the developer

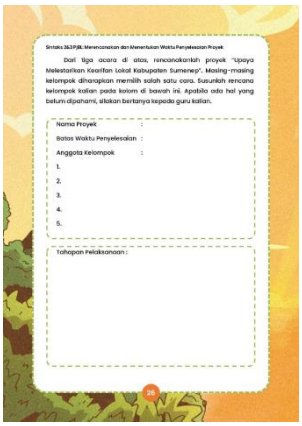
Source: Researcher

In the development of the Electronic Student Worksheet, the integration of local wisdom is found in the material components, learning syntax that is adjusted to the stages of project-based learning, and supporting information at the end. In the material aspect, there is an integration of local wisdom values of Topèng Dhâlâng, Nyadhar Ceremony, and Ul-Daul/Tong-tong Traditional Music. Integrating local wisdom in learning helps students recognize and preserve local values that may be endangered and need to be preserved (Uge et al., 2019). The learning stages of the Electronic Student Worksheet are based on local wisdom and refer to the Project-Based Learning model. Project assignments consist of making mini vlogs about local wisdom, designing information clippings about local wisdom, and practicing local wisdom and traditional arts in the surrounding area. This is in line with (Lasmana, 2024) that the PJBL model can accommodate student activities in learning local wisdom through project presentations presented in learning. The supporting information section in this Electronic Student Worksheet Product presents information about the description of local wisdom and its values, as well as examples of the application of local wisdom in everyday life (Surtikanti

et al., 2017). Overall, the integration of local wisdom in E-LKPD is presented in the following table 9.

Table 9
Table of Local Wisdom Integration in Electronic Student Worksheet Components

Components of Electronic Student Worksheets	**Integration of Local Wisdom in Electronic Student Worksheets**
The initial section contains the identity of the electronic learner worksheet, Pancasila learner profile, learning outcomes, objectives, and flow of learning objectives, as well as fundamental questions. In the fundamental question section, the questions presented are integrated with issues surrounding regional local wisdom that are now widely recognized by foreign nations. The statement seeks to train learners' critical thinking and analysis.	
The main section contains supporting materials, tasks, and exercises for learners. In this section, learners study the values of local wisdom found in *Topèng Dhâlâng*, *Nyadhâr* Ceremony, and *Ul-Daul/Tong-tong* Tradition Music and its application in daily life. Furthermore, students design projects to preserve local wisdom in groups in the form of mini vlogs of local wisdom in their area, clipping, and practice of local wisdom. This is in accordance with the purpose of PjBL, which is to reflect on learners' knowledge collaboratively through project work (Bell, 2010).	   

Components of Electronic Student Worksheets	Integration of Local Wisdom in Electronic Student Worksheets
The final section contains reflection and evaluation activities. Evaluation activities are presented in the form of questions in the context of local wisdom.	

Source: Researcher, 2024

Products that have been developed will enter the product validation stage, which is conducted by expert validators. This stage is usually also called an internal trial (Daniar et al., 2022). Testing through this expert validator includes validation of learning material design, learning design experts, and material experts. The average total weighted value given by each validator (V_{ah}) ,will be adjusted to the product development validation criteria as follows.

Table 10
Criteria for Expert Validation

Percentage	Description
81,25%≤V_ah≤100%	Very valid
62,5%≤V_ah<81,25%	Fairly Valid
43,75%≤V_ah<62,5%	Less Valid
25%≤V_ah<43,75%	Not Valid

Source: Akbar, Researcher Modification 2024

Table 11
The Result of Expert Validation

Expert Validation Result	Percentage of Value
Learning Design	98,3%
Learning Materials	96,67%
Content	97,5%
Average (V_ah)	97,49%
Description	Very Valid

Source: Researcher, 2024

Based on table 11, the validation of electronic students' worksheets learning materials includes some aspects of learning design, learning materials, and content. The aspects assessed in the learning design consist of the completeness and conciseness of the teaching module components, the suitability of learning objectives and activities, and test instruments. Furthermore, aspects assessed on learning materials include the completeness of electronic students' worksheets components, electronic students' worksheets efficiency, ease of understanding electronic students' worksheets in learning, suitability of learning steps with test instruments, and language use. Meanwhile, the material aspect is assessed through the suitability of the material with the curriculum, learning activities, and time allocation, the completeness of the material, the suitability of the material with the characteristics and needs of students, and the language used. Learning materials can also be categorized as valid if they are arranged systematically with complete components, developed in accordance with indicators of learning achievement, and made based on the curriculum applied at school (Lestari & Muchlis, 2021). Learning materials can be said to be valid if they are developed in accordance with the demands of the applicable curriculum and are presented in an attractive manner according to the needs of students to increase their learning motivation (Putra & Syarifuddin, 2019).

Based on expert validation results, the percentage value given by each validator is 98.3% for the validity of learning design, 96.67% for the validity of learning materials, and 97.5% for the validity of the material with an average product development validation value by experts of 97.49%. These results indicate that the electronic student worksheet teaching materials developed are very valid based on table 10 of the criteria for the validity of teaching materials.

After the product is declared valid based on the results of the expert validation test, the product will enter the implementation test stage to measure the attractiveness of product. The attractiveness of the product can be known based on the results of the teacher and students response questionnaires. Table 12 shows criteria for Attractiveness of Teaching Materials.

Table 12
Criteria for Attractiveness of Teaching Materials

Percentage	Description
$81{,}25\% \leq R_{mnr} \leq 100\%$	Very Attractive
$62{,}5\% \leq R_{mnr} < 81{,}25\%$	Moderately Attractive
$43{,}75\% \leq R_{mnr} < 62{,}5\%$	Less Attractive
$25\% \leq R_{mnr} < 43{,}75\%$	Not Interesting

Source: Akbar, 2022, Researcher Modification, 2024

Table 13
Data from Teacher and Learner Response Questionnaires

Response Questionnaire	Percentage of Value
Teacher Response	99,165%
Learner Response	90,755%
Average (R_mnr)	94,96%
Description	Very Attractive

Source: Researcher, 2024

Based on the data in table 13, the percentage of the results of the teacher and learner response questionnaire on the attractiveness of electronic students worksheets teaching materials is 99.165% and 90.755% respectively with an average response questionnaire data of 94.96%. The results of the average data of the teacher and learner response questionnaire show that the teaching materials electronic students worksheets based on Project Based Learning (PjBL) integrated local wisdom Sumenep is very interesting to use in accordance with the criteria for the attractiveness of learning materials in table 12.

Discussion

Learning materials are indispensable for teachers and students in carrying out learning to achieve effective and efficient learning objectives. This student worksheet based on the local wisdom ofumenep integrates the value of local wisdom Sumenep in the form of Topèng Dhâlâng, Nyadhar Ceremony, and Ul-Daul/Tong-tong Traditional Music. This learning material is important for students to make it easier for students to access and construct an understanding of learning materials more clearly and systematically (Kristanto et al., 2017).

Introducing local cultural values to students in primary schools can be done by implementing culturally oriented learning. Learning activities oriented towards the introduction of this culture can significantly increase children's understanding and love of the local culture around them (Desyandri, 2018). The serving of learning materials in the form of local culture-based student worksheets helps students get to know culture, be able to preserve and actualise the value of local wisdom in everyday life (Rahmawati & Rohim, 2020).

Project-based learning is very effective to accommodate students' activities in cultural learning (Achmad et al., 2024). Project-based learning emphasises active, collaborative and experiential learning, through projects that are relevant to their lives. Local wisdom-based learning activities that are incorporated into this local culture-based student worksheet, among others, refer to the assignment of projects in the PJBL model including making mini vlogs of the local culture of Sumenep, making clippings of the local culture of Sumenep, and practicing the local wisdom of Sumenep in the form of dance and musical art. These activities provide opportunities for students to get to know the culture of their region, as the local cultural identity of the people of Sumenep so that it can improve the cultural literacy skills of elementary school students. Aligned with (Irianto & Febrianti, 2017) cultural literacy and citizenship is very important for students.

In addition, the learning process using this electronic learner worksheet emphasises the actualisation of creative pedagogy in the classroom including creative teaching, creative learning, and learning for creativity (Jin & Su, 2021). Creative teaching can be realised by utilising the potential around learners (Albar & Southcott, 2021), in this case researchers use a set of musical instruments karawitan sumenep to introduce local wisdom in project-based learning, the realisation of creative learning by utilising interactive teaching materials involving teachers and learners actively (Fan & Cai, 2022), project work that emphasises the process of developing learners' creativity (Wu & Wu, 2020), as well as including the role of technology in the learning process (Strzelecki, 2023).

Attempts to foster the creative skills of grade V students of SDN Parsanga II through the use of electronic student worksheets based on Project Based Learning (PjBL) integrated with Sumenep local wisdom take place optimally. This is in line with research conducted by Fitriyani (2021) which explains that the implementation of creative

pedagogy-based learning in social studies can be realised through project-based learning by paying attention to aspects of fluency, flexibility, originality, and elaboration (Fitriyani, 2021). The aspects of creativity that are expected to emerge in learning are aspects of fluency, originality, flexibility, and elaboration ability of students (Kemp, 2022). The fluency aspect is seen from the learners‘ ability to propose ideas and suggestions in efforts to preserve Sumenep local wisdom that is recognised by foreign nations, the flexibility aspect is evidenced by the learners' ability to classify several examples of Sumenep local wisdom according to the type of local wisdom, the originality aspect is assessed from the learners‘ ability to complete and present the Sumenep local wisdom preservation project, and the elaboration aspect is seen from the learners' ability to manage and describe information about their project to convey to their peers using the results of their own understanding construction.

The use of electronic student worksheets integrated with Madura local wisdom provides an opportunity for students to develop local culture-based project assignments according to their creativity. Originality of student work ideas, in completing culture-based project assignments, as one of the indicators in developing creative thinking skills in students. This was stated by Abdulla, A. M., & Cramond, B. (2016) regarding student creativity can be seen from the originality and usefulness of something produced in learning at school (Abdulla & Cramond, 2016).

In addition, the use of electronic student worksheets integrated with local wisdom of Sumenep in learning is to practice students' creative thinking skills. Students identify issues around the type of local wisdom, the potential of local wisdom that can be utilized, and the media that can be used in efforts to solve these problems (Nur et al., 2023). Through sensitivity to the surrounding environment to identify existing potential, students' creativity in solving learning problems can be trained (Davies et al., 2013). From the aspect of usefulness, the results of students' projects in the form of mini vlog projects about local wisdom, clippings containing information, and learning to practice local wisdom, can be used as a form of preservation of local wisdom through the learning process.

The use of electronic student worksheet teaching materials integrated with local wisdom of Madura Sumenep also provides a more contextual learning experience by involving students directly with the efforts to preserve the local wisdom of the region.

This is in accordance with the statement from Tetiana, K. et.al which states that learning can be more meaningful if it actively involves the role of students in learning activities that are in accordance with the real conditions of their daily lives (Tetiana et al., 2023). Learning using electronic student worksheet teaching materials at SDN Parsanga II is also able to present more interactive learning between teachers and students in the classroom. This is in accordance with the statement from Wardani and Suniasih that learning by utilising electronic learner worksheets can present learning that is fun, interactive, and able to create a conducive learning environment (Wardani & Suniasih, 2022). Thus, the use of electronic learner worksheet teaching materials integrated with Madura Sumenep local wisdom in grade V SDN Parsanga II is able to improve students' creative thinking skills that are packaged contextually and interactively according to the potential of schools and the needs of students.

To improve the effectiveness of students' understanding of local culture, the electronic student worksheets developed must be prepared and prepared optimally. Student worksheets are developed based on the needs and characteristics of students (Fadlillah et al., 2024) and according to the level of students' cognitive abilities. The local wisdom integrated in the teaching materials determines the quality of the content of the teaching materials developed. The material included in this electronic student worksheet based on the local culture ofumenep consists of the integration of local wisdom values of Sumenep local wisdom values in the form of Topèng Dhâlâng, Nyadhar Ceremony, and Ul-Daul/Tong-tong Traditional Music. Other relevant local wisdom elements can also be integrated in this teaching material if you want to develop further.

Conclusion

Electronic students worksheets based on Project-Based Learning integrated local wisdom Sumenep is an electronic learning material based on the stages of the PJBL model and integrates the value of local wisdom of Sumenep in the form of Topèng Dhâlâng, Nyadhar Ceremony, and Ul-Daul/Tong-tong Traditional Music. The components of this electronic worksheet consist of initial identity, flow of learning activities by the stages of the PBL model, and project assignments that integrate local wisdom, reflection, and evaluation. This electronic student worksheet is used as learning material for students to

recognize and understand the diversity of national culture through the values of regional local wisdom and efforts to preserve it through the learning process.

The electronic student worksheet component consists of the preliminary section, the main sections, and The final section. In the preliminary section contains the identity of the electronic learner worksheet, the Pancasila learner profile, the flow of learning objectives, and basic questions. In the main sections, the questions presented are integrated with issues around the local wisdom of the region. In the core section, it contains supporting materials, tasks, and exercises for learners. In this section, learners learn the local wisdom values found in Topèng Dhâlâng, Nyadhar Ceremony, and Ul-Daul/Tong-ton Music Tradition. The final section contains reflection and evaluation activities. Evaluation activities are presented in the form of questions in the context of local wisdom.

The electronic students worksheets learning materials developed have been declared valid based on the results of expert validation of learning design, teaching materials, and materials with an average percentage value of 97.49% very valid category. This electronic students worksheets teaching material product has also been declared attractive based on the average percentage of teacher and student response questionnaire results of 94.96% in the very attractive category. The limitation in this study is that there is no test of the effectiveness of the products developed on the basis of limited time and distance of the research site. Future research, it is necessary to test the effectiveness of the products developed to determine the effectiveness of the teaching material products developed on the achievement of learning objectives after the use of electronic students worksheets in the classroom.

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