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Development of LKPD Based on Contextual Learning in Science Subjects to Improve Higher-Order Thinking Skills of Fourth Grade Students of SDN Inpres Buncu

Zihan Maulani[1], Hairunisa[2], Fakhri Khusaini[3]

[1,2,3]Elementary School Teacher Education STKIP Taman Bima Students

E-mail: * **zihanmaulani724@gmail.com**, anis010286@gmail.com, Indonesianlongman@gmail.com

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Abstract

This research focuses on the development of Contextual Teaching and Learning (CTL)-based science LPDs to improve the high-level thinking skills (HOTS) of fourth grade students at SDN Inpres Buncu. Different from previous studies that tend to separate science and social studies subjects, this research integrates both according to the Merdeka Curriculum. In addition, the research was conducted in a school with limited resources and used the ADDIE model to thoroughly integrate CTL syntax into the LKPD development. The research participants included expert validators (the material consisted of one lecturer, the media consisted of one lecturer) and 25 fourth grade students. Questionnaires for expert validation, instructor response, and student response are examples of data gathering tools. lifts, learning implementation observation sheets and the test instrument in this study was used to measure the effectiveness of Contextual Teaching and Learning (CTL)-based worksheets in improving students' higher-order thinking skills (HOTS). This test was conducted using descriptive questions structured based on Bloo's taxonomy. The validation results showed that LKPD was very feasible with a percentage of material experts of 91% and media experts of 92% indicating that LKPD was under the "very feasible" category. The teacher's response questionnaire serves as the practicality test obtained a score of 95% and the student response questionnaire obtained a score of 93%, both in the "Very Practical" category. In addition, the results of observation of learning implementation also show a high level of practicality with a percentage of 95%. The effectiveness test through the pre-test and post-test showed an increase in score with an N-Gain of 0.71 (high-effective category) which signified a significant improvement in high-level thinking ability. Based on the results of the study, CTL-based LKPD is declared valid, practical, and effective for science learning. The implication is that this LKPD can be an alternative teaching material for teachers, support the development of

teaching tools in schools, and increase motivation, independence, and critical, evaluative, and creative thinking skills of students. In addition, this research can also be a reference for developers in designing innovative CTL-based learning media.

Keywords: worksheet, contextual teaching and learning, HOTs, Elementary Education

1. Introduction

Higher-order thinking skills are crucial to teach from elementary school onward because they help students think critically, disseminate information, and create solutions independently. In this thesis, HOTS focuses on three main dimensions: analyzing (C4), disseminating (C5), and creating (C6) all of which are relevant to students' lives.

The gap in this research lies in the absence of CTL-based LKPD development specifically aimed at improving HOTS in the science subject "My Region and Its Natural Resources" in grade IV elementary school. Evidence from observations, interviews, and the minimal number of previous innovative products reinforces this gap**.**

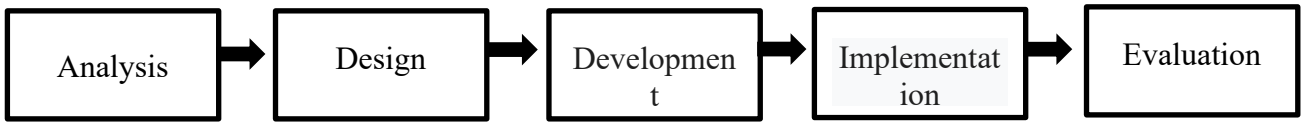
In response to these challenges, the Contextual Teaching and Learning (CTL) approach is present as one of the relevant solutions. CTL is a learning concept that relates academic material to the real-life context of students, so that they can find the meaning of what they learn and relate it to their personal experiences Sudiyono, (2020: 16). Through CTL, learning becomes more meaningful, challenging, and effectively encourages learners to think reflectively, critically, and analytically. However, the effectiveness of CTL implementation is highly dependent on the availability of teaching materials that support and facilitate this approach. Student Worksheets (LKPD) that are specifically designed with CTL principles can be a very effective instrument to guide students in an active, constructive, and relevant learning process, while integrating IPAS concepts with contextual issues that are close to students. CTL emphasizes the connection between learning materials and students' real lives, so that students do not only memorize information, but are able to understand, apply, and analyze concepts in relevant contexts.

Given the context of the issues that have been explained, this study has an urgency to develop Contextual Teaching and Learning-based Student Worksheets (LKPD) in science lessons. This development is focused on improving the Higher Level Thinking Ability of grade IV students at SDN Inpres Buncu. LKPD is an effective alternative learning medium for improving elementary school students' HOTS (Comprehension Skills) because it encourages active, contextual, and problem-solving-based learning. Through activities that require analysis, evaluation, and creativity, LKPD fosters critical and innovative thinking patterns in students from an early age.

This study aims to develop a valid, practical, and effective Contextual Teaching and Learning (CTL)-based IPAS grade IV Learner Worksheet (LKPD) in improving students' Higher Level Thinking Ability (KPT), especially in the aspects of analyzing (C4), evaluating (C5), and creating (C6). Some previous studies, such as Fitriyani et al. (2021), Astuti & Mulyani (2020), and Wulandari & Rochintaniawati (2019), showed that the CTL approach in teaching materials can increase learning engagement and students' critical thinking skills. However, there have not been many studies that specifically develop LKPD IPAS for grade IV SD with a focus on systematically improving Higher Level Thinking Ability. The novelty of this research lies in combining the CTL approach with KPT indicators in the LKPD format which is tested for its validity, practicality, and effectiveness through direct classroom trials. The significant contribution of this research is to provide alternative teaching tools that are contextualized and oriented towards strengthening 21st century thinking skills, as well as being a practical reference for teachers in designing meaningful and applicable science learning.

2. Methods

The goal of this research and development (R&D) project is to provide Contextual Teaching and Learning-based Student Worksheets (LKPD) for social studies classes that will help fourth-grade students' Higher Level Thinking Capabilities. Because it enables researchers to methodically create and evaluate the viability of educational goods, the R&D technique was selected (Sugiyono, 2017). The five steps of research (Analysis, Design, Development, Implementation, and Evaluation) of Benny A. Pribadi's (2016) ADDIE model are adapted in this study.The stages of this research include:



The participants in this study consisted of 25 fourth grade students of SDN Inpres Buncu who were divided into two trial stages, namely 5 students for the small group trial and 20 students for the large group trial. In addition, two expert validators were also involved, namely one material expert lecturer and one media expert lecturer, to assess the feasibility of the content and appearance of the LKPD. A fourth grade teacher also responded to the practicality of the LKPD. This research was conducted at SDN Inpres Buncu as the main location, which was chosen due to limited resources so that it is relevant to the context of developing LKPD based on Contextual Teaching and Learning (CTL).

Among the instruments utilized for data collection are:

a. Expert Validation Questionnaire: Used to collect product feasibility data from expert validators (materials and media) covering aspects of the content, construction, and language of the LKPD.
b. Student Response Questionnaire, Teacher Response Questionnaire and Observation Sheet: Used to measure the level of practicality of LKPD from a user perspective after small group and large group trials. This questionnaire contains questions about the ease of use, attractiveness, and benefits of LKPD in learning.
c. The test instrument in this study is in the form of a description question designed to measure students' high-level thinking skills (HOTS) at the C4 (analysis), C5 (evaluation), and C6 (creating) levels according to Bloom's revised taxonomy. This test is used in the form of pre-test and post-test to determine the improvement of students' abilities after using the Contextual Teaching and Learning (CTL) based LKPD. The test results were analyzed using the N-gain formula to assess the effectiveness of LKPD in improving HOTS of fourth grade students of SDN Inpres Buncu.

Three methods of data analysis are employed: quantitative, qualitative, and descriptive. To further enhance the LKPD product, qualitative data—in the form of recommendations and input from knowledgeable validators—was descriptively examined. Quantitative data from the expert validation questionnaire and the student and teacher response questionnaire were analyzed using the Likert scale. The gathered data is then transformed into an eligibility percentage using the procedure below:

$$P = \frac{F}{N} \mathrm{X}\, 100\%$$

Information:
P= percentage of questionnaire data
F = Total score obtained
N=Maximum number of expected scores

The results of the percentage calculation are then converted into product feasibility categories using the following criteria (adapted from Riduwan):

Table 1.
Product Eligibility Level Criteria

Percentage (%)	Category
81% - 100%	Very Good / Very Worth It
61% - 80%	Good/Decent
41% - 60%	Pretty Good / Pretty Decent
21% - 40%	Not Fit / Less Fit
0% - 20%	Very Poor/Very Less Worthy

Researchers assessed how well Contextual Teaching and Learning-based LKPD increased students' high-level thinking skills using the N-Gain computation..The objective of this N-Gain analysis was to determine how their higher-level thinking skills developed after using the Contextual Teaching and Learning-based LKPD created by the researchers. The following formula is applied when calculating N-Gain: (Septiana et al., 2022)

$$g = \frac{Score\ Posttest\ -\ Score\ Pretest}{Maximum\ Score\ -\ Score\ Pretest}$$

The following table presents the criteria used to interpret the N-Gain value, with the aim of classifying the level of improvement in student learning outcomes into low, medium or high categories.

Table 2.
N-Gain assessment criteria

Value	Criterion
N-Gain ≥ 0,70	Tall
0,30 ≤ N-Gain < 0,70	Keep
N-Gain < 0,30	Low

Source: Hake (1998)

3. Results and Discussion

This section presents the results of research on the development of LKPD based on Contextual Teaching and Learning in IPAS subjects to improve the Higher Level Thinking Ability of grade IV students at SDN Inpres Buncu, as well as its discussion.

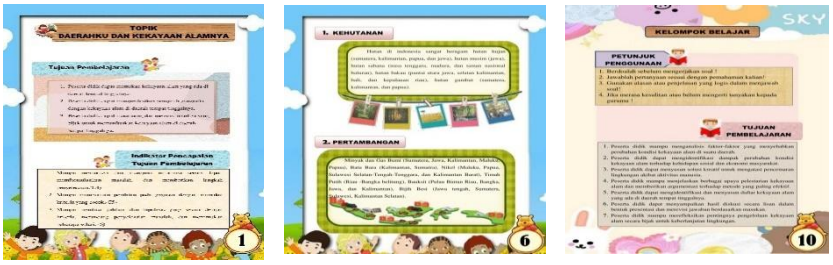
a. **Product Development Results**

The LKPD development process follows the stages of the ADDIE model, starting from the needs analysis stage that identifies the importance of contextual teaching materials that can facilitate KBTT. At the design stage, an LKPD framework is designed that integrates CTL components, such as learning communities, modeling, reflection, inquiry, questioning, constructivism, and authentic assessment. IPAS material is presented in the context of everyday phenomena that are close to students' lives. The development stage was carried out by preparing an initial draft of Contextual Teaching and Learning (CTL)-based LKPD based on the results of the previous analysis and design. The draft LKPD was then validated by two experts, namely material experts and media experts, to assess the feasibility of content and appearance. Validation was conducted through assessment sheets and written feedback. Based on the suggestions from the validators, product revisions were made until

the LKPD was declared suitable for testing. This process ensures that the LKPD meets the validity standards before entering the implementation stage.

Figure 1

LKPD IPAS



b. **Expert Validation Findings**

The validation of LKPD products is carried out by two expert validators: material experts and media experts. The validator assessment is based on a validation questionnaire instrument that refers to the product feasibility criteria. The validation results are presented as follows:

1) Subject Matter Expert Validation

Taking into account the results one of the most important steps in the creation of learning tools is validation by subject matter experts, which guarantees that the information presented is in accordance with pedagogical principles, learning objectives and relevant competency standards. Mrs. Surya Ningsih M.Pd, validated this research as a material expert who has skills in basic education, especially in science subjects and subjects related to science.

Table 3:

Findings from the Material Recapitulation Prior to Revision

No	Assessment Aspects	Shoes		Percentage	Ket.
		F	N		
1	Content Eligibility	14	20	70%	Proper
2	Language	16	20	80%	Proper
3	Ppresentation	20	25	80%	Proper

4	Integration with the CTL approach	25	30	83%	Highly feasible
Overall percentage		75	95	78%	Deserved, needs revision

The findings of the evaluation recapitulation are reached during the first step of validation by the materials specialist, as shown in Table 2 above. According to the table, the overall score is 75 out of a possible 95, or 78%, and falls into the "very decent" category. This evaluation shows that, although there are still some areas that need improvement, LKPDs based on Contextual Teaching and Learning in general have met the requirements for material substance feasibility and are suitable for use in teaching.

Table 4.
Results of the Material Recapitulation after revision

No	Assessment Aspects	Shoes		Percentage	Ket.
		F	N		
1	Content Eligibility	17	20	85%	Highly feasible
2	Language	17	20	85%	Highly feasible
3	Ppresentation	22	25	88%	Highly feasible
4	Integration with the CTL approach	26	30	86%	Highly feasible
Overall percentage			95	91%	Highly feasible

According to the validation results, which are displayed in Table 3, the Contextual Teaching and Learning-based LKPD obtained a 91% feasibility score upon revision, placing it in the "very feasible" category. This shows that the content of the LKPD meets the set quality standards, including suitability with learning objectives, integration of learning materials and activities, and accuracy of language and terminology.

Based on the assessment carried out by the material experts above before the revision of the revision, a percentage of 78% was obtained with several inputs and suggestions, after analyzing and revising the assessment results from the material experts there was an increase of 13% from the first validation to 91%. The percentage of material validation score is more than 81-100%, so the LKPD based on contextual teaching and learning that is developed is categorized as very good or very feasible without the need for revision in terms of material.

Furthermore, subject matter expert validation specifically evaluates how well the Contextual Teaching and Learning approach is applied throughout the curriculum. The seven syntaxes of CTL, which include: (1) Constructivism, (2) Inquiry, (3) Questioning, (4) Learning Community, (5) Modeling, (6) Reflection, and (7) Authentic Assessment,

have been methodically integrated into every action and content of the LKPD. For example, inquiry activities in the LKPD are designed to guide students to discover knowledge through real exploration, not just receiving information. This is crucial in encouraging Higher Level Thinking Skills, because students are challenged to analyze, evaluate, and create their own ideas, not just remember facts (Putri et al., 2020).

2) Media Expert Validation
Mrs. Nurul Fauziah, M.Pd.'s assessment of media experts obtained an average score of 67%, included in the "good" category. This LKPD is considered attractive in terms of aesthetics, easy to use, and conducive to independent and group learning.

Table 5.
Media Recapitulation Results before revision

No	Assessment Aspects	Shoes		Percentage	Ket.
		F	N		
1	Media Display	22	30	73%	Proper
2	Media Presentation	18	25	72%	Proper
3	Media Uses	16	25	64%	Less worthy
4	Integration with the CTL approach	18	30	60%	Less worthy
Overall percentage			110	67%	Proper

According to Table 4, the LKPD received a total score of 74 out of 110, or 67%, and was deemed "feasible" by media experts during the initial round of media validation. While these findings suggest that the LKPD can be used, there are still a number of areas that may need improvement, particularly related to language and graphics.

Tabel 6.
Recapitulation Result After Revision

No	Assessment Aspects	Shoes		Percentage	Ket.
		F	N		
1	Media Display	28	30	93%	Highly feasible
2	Media Presentation	23	25	92%	Highly feasible
3	Media Uses	25	25	100%	Highly feasible
4	Integration with the CTL approach	26	30	86%	Highly feasible
Overall percentage			110	92%	Highly feasible

After this second stage of validation, media experts stated that LKPD development products based on contextual teaching and learning on regional materials and their natural resources are suitable for use at the elementary level. In addition, the validation

results also show that the product is very good with an overall value percentage of 92%, so it is classified as a category that is very suitable for use.

Based on the assessment of stage one stage two above, it was found that the first stage obtained a percentage of 67% with several inputs and suggestions for improvement, after analyzing and revising the assessment results from media experts in the second stage there was an increase of 25% from the first validation to 92%. The media validation percentage score is from 81-100%, so the LKPD based on contextual teaching and learning that is developed is categorized as very good or very feasible and does not need revision in terms of media.

c. **Product Practicality Test Results**

1) Teacher's Response

Table 7.

Results of the Teacher Response Recapitulation

No	Assessment Aspects	Shoes		Percentage	Ketegori
		F	N		
1	Conformity of LKPD Material	23	25	93%	Very practical
2	LKPD Design and Display	25	25	100%	Very practical
3	Implementation in Learning	24	25	96%	Very practical
4	Development of High-Level Thinking Skills	23	25	93%	Very practical
5	Integration with the CTL Approach	24	25	96%	Very practical
Overall percentag			125	95%	Very practical

According to table 6, which displays the practicality test results based on teacher comments, LKPD, which is focused on contextual teaching and learning, received a total score of 119 out of 125, placing it in the "very practical" category with a 95% percentage. As demonstrated by this, the resulting modules are not only useful in terms of media and content, but they are also easy enough for teachers to employ in the teaching and learning process without requiring complex training or instruction.

2) Student Responses

Table 8.

Results of the Recapitulation of Student Responses

Number of Statements	Acquisition Score	Maximum Score	Percentage of Value (%)	Information

Result	18	416	450	92%	Very practical

Considering the information from the big group trial's replies students to contextual teaching and learning-based LKPD media, a percentage of 92% was obtained with very practical explanations, so that LKPD media based on contextual teaching and learning is said to be very practical to use as a learning resource, especially for grade IV elementary school students.

3) Observation Sheet

Table 9.
Recapitulation Results of Large Group Trial Observations

Number of Statements	Acquisition Score	Maximum Score	Percentage of Value (%)	Information	Number of Statements
Result	17	81	85	95%	Very practical

According to table 8 data, one observer's observation activities in a large group trial of LKPD based on contextual teaching and learning yielded a 95% success rate. This indicates that the teaching module or learning implementation plan utilizing LKPD based on contextual teaching and learning in grade IV elementary school students was executed flawlessly.

This shows that the LKPD developed is very easy to use, attractive, and has a positive impact on the learning experience of grade IV students at SDN Inpres Buncu. The fact that these students responded favorably suggests that LKPD can be used successfully in the teaching of science.

d. Effectiveness Test Results

The effectiveness test was carried out by comparing the scores of pre-test and post-test of high-level thinking ability in 20 students who participated in a large group trial. The results are presented in Table 4.

Table 10
Pre-Test and Post-Test Acquisition of Large Group Trials

No	Name	Total Values		Maximum Score
		Pre-test	Post-test	
1	B	49	100	100
2	MAT	44	100	100
3	P	7	40	100

4	ES	49	60	100
5	J	27	70	100
6	N	40	90	100
7	A	44	80	100
8	HY	49	100	100
9	F	17	40	100
10	NP	32	80	100
11	R	56	100	100
12	F	57	100	100
13	D	20	60	100
14	L	30	80	100
15	AR	4O	85	100
16	RS	50	90	100
17	MFAA	45	95	100
18	KJ	50	100	100
19	D	30	90	100
20	AA	48	100	100

Table 11.
Recapitulation of Large Group Trial Pre-Test and Post-Test Results

No	Your	Value Average	Information	
			Passing	Not Passing
1	*Pre-test*	43,4	0	20
2	*Post-test*	84	16	4

Based on Table 10, in general, the average pre-test score is 43, while the average post-test score increases significantly to 84. Based on the calculation of N-Gain, a value of 0.71 was achieved, which falls into the "high" level in terms of Hake's assessment. These results indicate that the developed LKPD is able to have a real positive impact in optimizing students' critical thinking skills.

e. Discussion

This project aims to develop a LKPD based on Contextual Teaching and Learning (CTL) that can enhance fourth-grade elementary school students' high-level thinking abilities in science courses. Based on validation, practicality evaluation, and effectiveness outcomes, the data indicates that the modules are categorized as extremely viable, very practicable, and effective.

1) LKPD eligibility from expert validation

After adjustments based on expert input, the validation score by the material expert reached 91%, which is in the "Very Feasible" category. The language and content aspects have undergone significant improvements, because it is considered that they need to be simpler and more contextual to suit the characteristics of elementary school students. This supports the findings of Rahayu & Sugiyanto (2020) who stated that modules that are suitable for use in education must meet the requirements for material completeness, content correctness, and suitability with the characteristics of students.

Validation by media experts also showed a very high score, which was 92%, which falls into the category of "Very Worthy". This figure confirms that the visual, navigational, and overall design elements of the LKPD have been effectively improved. This attractive design and interactivity is essential to facilitate Contextual Teaching and Learning learning, as it is able to present material in a more lively and relevant way for learners.

Furthermore, the validation of subject matter and media experts specifically evaluated how well the Contextual Teaching and Learning approach was applied throughout the LKPD curriculum. The seven syntax of CTL, which include: (1) Constructivism, (2) Inquiry, (3) Questioning, (4) Learning Community, (5) Modeling, (6) Reflection, and (7) Authentic Assessment, have been methodically integrated into each LKPD activity and content. For example, the LKPD is designed to facilitate inquiry activities that guide students to find knowledge through the exploration of IPAS phenomena in the surrounding environment, rather than just receiving information.The existence of a structured questioning section encourages students to think critically and ask in-depth questions, while group-based assignments support the formation of an educational community that enables pupils to discuss and build mutual understanding.The integration of CTL syntax is essential in encouraging High-Level Thinking Skills, as Instead of merely memorizing facts, students are pushed to analyze data, assess arguments, and develop original ideas or solutions (Sari & Dewi, 2023).

In addition, serious consideration is also given to the readability component of the LKPD. According to material and media experts, the redaction and sentence structure in the LKPD have been modified to suit the cognitive growth of grade IV elementary school students. The use of straightforward, unambiguous, and familiar language for students is strongly emphasized. This is important because, according to Dick & Carey (2022), the clarity of information and the adaptability of learning materials to the characteristics of students are two fundamental things in the development of effective teaching materials. Students' understanding of the information presented clearly will facilitate the process of constructing their knowledge and ultimately support the improvement of Higher Level Thinking Skills.

2) The Practicality of LKPD from Teachers, Students' Responses and Observations
With a percentage of 95%, teachers responded positively to the practicality of LKPD. Thanks to its structure, ease of use, and alignment with the Independent Curriculum, this module is considered very useful for educators who implement project-based learning. According to research by Utami & Agustin (2022), teachers find it easier to implement active and collaborative learning when LKPD is prepared systematically using a contextual teaching and learning approach.This assessment supports their findings.A large percentage of learners who responded (93%) stated that the program was engaging, easy to use, and offered an enjoyable educational experience.(Fitriyani et al.)claims that because digital teaching materials are interactive and facilitate contextual learning, allowing learners to learn as they do, learners are more eager to take advantage of them.

With a percentage of 95%, teachers responded positively to the practicality of LKPD. Teachers consider this LKPD to be easy to implement, very beneficial for educators in facilitating active and contextual learning, and in line with the demands of the Independent Curriculum. According to research by Utami & Agustin (2022), teachers find it easier to implement active and collaborative learning when teaching materials are prepared systematically using the CTL approach, which is in line with the findings in this study.

Meanwhile, the student response percentage is also very high, reaching 93%, which states that this LKPD is attractive, easy to use, and offers a pleasant educational experience. The high practicality from the student's side shows that LKPD does not cause significant difficulties for them, instead encourages active involvement in learning. Fitriyani et al. (2021) claim that because digital teaching materials are interactive and facilitate contextual learning that allows learners to learn while doing, They're more willing to use them. The active and meaningful learning tenets of CTL are directly supported by this circumstance.

Furthermore, the findings of the observation of the application of CTL-based LKPD in IPAS learning demonstrated a high degree of implementation, at 95%. This figure shows that the LKPD can be effectively implemented in line with the developed learning plan and can support scheduled learning activities in the classroom.

The high level of practicality from these various perspectives suggests that the developed LKPD is very practical in supporting the implementation of the CTL approach and encouraging learners' engagement, which in turn is crucial in developing their Higher Level Thinking Skills.

3) Effectiveness of the module from pre-test and post-test tests
The average score of the students' high-level thinking capacity rose dramatically from 43 in the pre-test to 84 in the post-test, according to the quantitative data analysis of the pre-test and post-test. An N-Gain value of 0.71, which ranks in the "high" or "effective" range, further supports this gain. These results unequivocally demonstrate that the application of CTL-based LKPD has been successful in raising students' Higher Level Thinking Skills in science courses.

This improvement of high-level thinking skills is in line with the principles of Contextual Teaching and Learning that encourage meaningful and active learning. Through inquiry, questioning, and community learning activities that are integrated into the LKPD, students are consistently challenged to think deeper than just remembering facts. This is in accordance with the research of Putri et al. (2020) who found that active learning strategies that engage learners in depth can improve their capacity to think high-level, solve problems, and work together in teams. Although the study focused on PjBL, the essence of active engagement and contextual relevance that also characterizes CTL, has been shown to be effective in developing high-level cognitive skills. In addition, Sari & Dewi (2023) found that through practical exercises, group discussions, and presentations, the use of LKPD can accelerate conceptual knowledge. Thus, in line with 21st century learning needs that emphasize the development of critical, creative, collaborative, and communicative thinking skills, the CTL approach in LKPD directly encourages learners' cognitive engagement at a higher level. The practical implication of this research is that LKPD based on Contextual Teaching and Learning can be used as an alternative teaching material that is effective and applicable for teachers in designing meaningful learning and encouraging higher-level thinking skills since elementary school level. However, this study has limitations in the limited number of samples and the implementation of trials that were only carried out in a short time in one school, so the results cannot be widely generalized. Therefore, suggestions for future research are to expand the scope of subjects and trial locations, as well as to extend the implementation time to test the consistency and long-term impact of using CTL-based LKPDs in more diverse learning contexts.

4. Conclusion

Based on the results of research and development, LKPD based on Contextual Teaching and Learning made using ADDIE model steps ranging from needs analysis to product refinement, has produced LKPD that is feasible to use, practical, and efficient for educational purposes. With a score of 91% from material experts and 92% from media experts, the validation results showed that LKPD was included in the very feasible category. Teachers (95%) and students (93%) LKPD is regarded as highly practical because to its ease of use and capacity to support both individual and group learning., In addition, the results of observation of learning implementation also show a high level of practicality with a percentage of 95%. Furthermore,

the increase in the average score from 43.4 to 84 with an N-gain value of 0.71 which is included in the high category, shows that LKPD has succeeded in improving students' high-level thinking skills.

5. Acknowledgement

The author would like to thank SDN Inpres Buncu for providing permission and assistance during the research process. In addition, gratitude was also conveyed to grade IV teachers and all students who have played an active role in the LKPD trial based on Contextual Teaching and Learning. The author also thanked the material experts and media experts who served as validators, for the guidance, suggestions, and criticisms that were very helpful during the product manufacturing process. Without the efforts and assistance of these various parties, this Research could not have been finished properly.

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