

The Validity and Practicality Contextual Teaching and Learning Based Cognitive Distance in Learning IPS

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Abstract. The adoption of the Contextual Teaching Learning (CTL) learning model is anticipated to serve as a bridge to develop High Order Thinking (HOT) students, which in turn can enable students to accomplish High Order Thinking (HOT), which is a necessary skill for navigating the period of revolution 4.0. However, students' HOTS level is still quite low. This is evident from the social studies learning outcomes for class V elementary school, where the average score is less than 70. This kind of research, which is a subset of development research (Research and Development), aims to create a useful product for educational use rather than test a theory. This research was conducted in primary schools in the Lubuk Pakam area. The results showed an increase in learning outcomes with an average of 7.5 and an increase in learning motivation of 88.01% and student self-regulation reached 86.6%.

Keywords: High Order Thinking Skill, Contextual Teaching and Learning, Cognitive Distance

1 Introduction

In the current information era, the role of teachers has evolved from merely being the primary source of learning to becoming interactive learning managers, where teachers and students learn from each other. To support this role, teachers must provide various facilities and establish a favorable learning atmosphere to guarantee that the educational process can take place effectively and efficiently [1]. The effectiveness of learning heavily depends on the teacher's ability to plan, deliver material, utilize various methods, media, and learning resources, as well as conduct comprehensive evaluations. All of these aim to enhance student activity and learning outcomes, making learning more meaningful in daily life [2].

Based on initial observations conducted at SD Lubuk Pakam, there is a tendency for strict subject separation, particularly in the upper grades. The learning process is more oriented towards instructional outcomes with an evaluation system that emphasizes repetition of information. Higher Order Thinking Skills (HOTS) and intellect development are impacted by this of fourth and fifth-grade students, where students generally still think holistically and understand the relationship between concepts simply, relying on concrete objects and direct

experiences. The implementation of an appropriate learning model, Contextual Teaching and Learning (CTL), for example, can enhance students' critical thinking abilities, including HOTS. Memorization is merely one aspect of the thought process known as HOTS but also deep understanding and critical analysis [3]. HOTS encompasses the highest levels of cognitive learning outcomes, namely analyzing, evaluating, and creating [4]. Finding the highest level of students in Bloom's taxonomy which includes the capacity to distinguish, arrange, and attribute information is the aim of the HOTS assessment. The results of this measurement provide valuable input for improving the learning system, enhancing students' ability to interpret, analyze, or manipulate acquired information, which can be seen from their learning achievements [5].

Based on observations at SD Lubuk Pakam, it was found that students' abilities in Social Studies (Ilmu Pengetahuan Sosial, IPS) were still very low. Students found IPS material difficult to memorize, understand, and recall, with limited historical knowledge being one of the causes. Assessment data from 149 students showed an average score of 71.14, which is still below the National KKM (Minimum Competency Standards) of 75. The low skill level of students affects their critical thinking during the learning process. This is consistent with Arpah's viewpoint [6], which asserts that the capacity for abstract thought, particularly critical thinking, is essential. Critical thinking is an essential skill, but the reality in the field does not yet meet expectations. Therefore, teachers need to apply various innovative learning models to develop students' thinking skills.

According to Ennis [7], reasonable, introspective thinking aimed at determining what to believe is another definition of critical thinking. One of the higher order cognitive abilities in problem solving is the capacity for critical thought. In line with Rahma and Isralidin's opinion [8], Higher order thinking skills refer to sophisticated thought processes. These cognitive processes can be divided into four categories: critical thinking, creative thinking, problem-solving, and decision making. The development of critical thinking skills is crucial during the learning process, where students must actively participate and the teacher just serves as a facilitator. However, in reality, many students have not yet honed their critical thinking skills, which impacts suboptimal learning outcomes. This is supported by Arpah's opinion [6], It highlights how crucial it is to maximize higher-order thinking abilities when learning, as it allows students to solve various cases or problems encountered in daily life. Additionally, technology in education also enables the use of innovative and engaging learning methods.

According to Prameswari et al. [9], essential thinking skills that are useful in all facets of life are critical thinking abilities. The CTL learning model can help improve higher-order thinking abilities like critical, creative, problem-solving, and decision-making. The CTL model is expected to serve as a bridge for building students with HOTS, ultimately enabling them to achieve higher levels of thinking. According to Cahyani & Sulastrri [10], the ability to critically evaluate information is a component of critical thinking, make appropriate decisions, and solve problems more effectively at any time. Students' knowledge and skills can be acquired when they are willing to construct new knowledge and skills during learning, thereby building HOTS. Mulyasa [11] mentions five essential elements in the practice of contextual learning. CTL has five key elements: 1) Making use of past knowledge, 2) Learning new things through comprehension the whole before details, 3) Understanding knowledge through hypothesis formulation, 4) Sharing for concept validation and development, and 5) Applying and reflecting on knowledge. This research aims to alter the CTL model's development based on Cognitive Distance. Previous research conducted by [12] explains that students can learn and integrate knowledge depending on the relationship of knowledge and their cognitive distance.

Based on initial observations in 2022, the researcher found that students' HOTS levels were still low, as seen from the learning outcomes of fifth-grade IPS, with an average pre-cycle score of 64.88, 64.82 in meeting 1, and 67.29 in meeting 2. Field conditions indicate that the learning methods used by teachers are not comprehensive, tending to be one-way. This is in line with the findings of Firmansyah & Jiwandana [13], which show that some teachers still tend to use teacher-centered learning approaches; (2) the limitation of teachers in accessing diverse learning resources. Teachers should have the creativity to explore various relevant learning resources. According to Suyanto [14], most teachers in schools tend to be less creative and innovative in using various learning methods, preferring traditional methods. Therefore, utilizing the CTL model based on it is anticipated that using cognitive distance as a teaching tool will increase students' comprehension of the material and enhance learning activities outside of school.

The purpose of this research is to create a Contextual Teaching and Learning (CTL) model that will improve the Higher Order Thinking Skills (HOTS) of SD Lubuk Pakam pupils. This development research is expected to formulate a model directly related to the educational process, including media preparation, methods, materials, and assessment instruments. The focus of this research is on improving students' HOTS, which, if not promptly evaluated and developed, may pose challenges in the future. It is expected that the application of this learning approach will improve students' critical and analytical thinking abilities. Given this context, the researcher is eager to carry out a study called "Development of a Contextual Teaching and Learning (CTL) Model Based on Cognitive Distance in Social Studies Learning to Enhance Higher Order Thinking Skills (HOTS) of Elementary School Students in Lubuk Pakam."

2 Methodology

A research and development (R&D) study is a type of study that is used to create a particular product and evaluate its efficacy. The Dick and Carey model, which comprises the following phases: analysis, development design, implementation, and evaluation, serves as the foundation for the methodology used in this study. The CTL model is the research's final product based on Cognitive Distance for enhancing the HOTS of elementary school students.

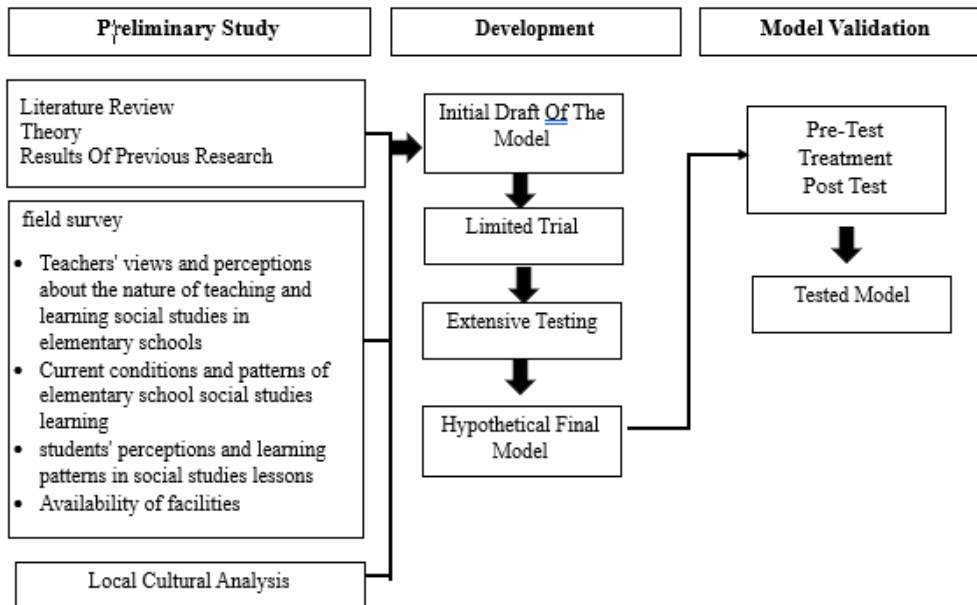


Fig. 1. Development research scheme

A qualitative data analysis methodology was used to examine the data collected for this investigation. This model involves starting the data analysis process concurrently with data collection and continuing until all data have been gathered. The analysis was conducted on data related to planning, implementation, and evaluation activities. This data was then reflected upon and organized accordingly. Finally, conclusions were drawn from the study's findings. The analysis was carried out separately to identify various shortcomings, allowing for precise revisions in the relevant aspects.

At this stage, feedback and suggestions from experts (validators) regarding the developed design were recorded on validation sheets, serving as the basis for revisions and determining whether the design was valid. The product-moment correlation formula was used to analyze the instrument validation data, and the following formula was used to assess the product validation data :

$$P = \frac{\Sigma skor}{\Sigma n}$$

Widoyoko [15]

Explanation:

- P : Percentage of feasibility
- $\Sigma skor$: Total score obtained (actual value)
- Σn : Number of items

The criteria for achieving practicality is displayed in Table 1.

Table 1. Score Interval Classification

Score Interval	Classification
>3.26 – 4.00	Very Valid
> 2.15 – 3.25	Valid
>176 – 1.75	Sufficiently Valid
1.00 – 1.75	Not Valid

3 Results and Discussion

The research and development were conducted following the stages outlined in the Dick and Carey model, which includes the steps of Analyze, Design, Development, Implementation, and Evaluation. The following provides a summary of each stage:

a. Analysis Stage

The development research process starts with the analysis stage. This stage serves as the starting point for developing a product until it is deemed of high quality. Analysis involves observing an object and describing it in detail. There is a need for additional learning resources for Social Studies (IPS), according to the curriculum and student characteristics analysis. The Cognitive Distance-based Contextual Teaching and Learning (CTL) approach was identified as necessary to assist students in enhancing their Higher Order Thinking Skills (HOTS).

b. Design Stage

During this stage, the researcher began designing the model of contextualized teaching and learning. After collecting data on the CTL model, the focus shifted to designing products such as the Learning Implementation Plan (RPP), teacher's guidebook, and student's guidebook. Regulation No. 65 of 2013 of the Ministry of Education and Culture served as the foundation for the RPP's structure, this covers topics, grade/semester, core materials, time management, learning objectives, fundamental skills and indicators, learning materials, learning strategies, media and resources, learning processes, assessment, and the school's identity.

Following the guidelines in Ministry of Education and Culture Regulation No. 81 A of 2013, the RPP was developed by going over the syllabus, choosing learning resources, identifying learning materials, establishing learning objectives, creating learning activities, creating assessments, allocating time, and so on. The learning process was conducted in three stages: introduction, core activities, and closing. The core stage utilized the CTL method, it aims to improve students' HOTS through constructivism, questioning, discovery, learning communities, modeling, reflection, and genuine evaluation. The closing stage included lesson summaries, reflection, feedback, and planning for follow-up activities.

c. Development Stage

The initial step in this development stage was the production of the learning tools. The validity of the product was tested by expert validators.

Validation Results

1. **Validation of the CTL Learning Model:** Considering the experts' validation findings, the CTL learning model received an average validation score of 3.12, categorizing it as valid.

The validation covered several aspects, including the theories underlying CTL, the model structure, the learning model syntax, implementation, and assessment. All aspects scored sufficiently to confirm the validity of the CTL model.

2. **Validation of CTL Content:** Content validation was carried out by subject matter experts, assessing components such as content feasibility, presentation feasibility, and contextual assessment. The average validation score for CTL content was 3.4, falling into the valid category. This suggests that the CTL learning model's content satisfies the standards required for implementation in elementary schools.
3. **Validation of the Learning Implementation Plan (RPP):** The RPP was validated by subject matter experts who assessed various components, including general explanations of the RPP, RPP identity, Basic Competencies (SK and KD), indicators, and learning strategies. The average validation score for the RPP was 3.2, which also falls into the valid category, indicating that the developed RPP meets the necessary standards for implementing the CTL model.
4. **Validation of the Teacher's Guidebook:** The Teacher's Guidebook was also validated by experts, evaluating aspects such as content alignment with SK and KD, competency achievement, and content feasibility. The validation resulted in an average score of 3.2, placing it in the valid category. This suggests that the Teacher's Guidebook meets the expected validity standards to support the implementation of the CTL model.
5. **Validation of the Student's Guidebook:** The Student's Guidebook validation results indicated that the book meets validity standards with an average score of 3.5. Aspects including content coverage and the clarity of learning objectives were covered in the validation, and the strategies and methods used in teaching. This result suggests that the Student's Guidebook is ready to be used as teaching material within the CTL model.
6. **Validation of the Student Worksheet (LKS):** The LKS was also evaluated by experts, focusing on aspects such as design, readability, clarity of activity steps, and the quality of illustrations. The average validation score for the LKS was 3.5, indicating that it is valid and can be used as part of the CTL model's implementation.

The validation process involved product evaluation by validators, product revisions, and subsequent product re-evaluation until the product was deemed appropriate for use by all validators. The following summarizes the validation results by the validators:

Table 2. Recapitulation of CTL Model Validation Based on Cognitive Distance

Product Component	Validation Score	Criteria
Contextual Teaching and Learning (CTL)	3.12	Valid
CTL Learning Content Validation	3.4	Very Valid
Lesson Plan Validation (RPP)	3.2	Very Valid
Teacher's Guide Validation	3.2	Very Valid
Student's Guide Validation	3.5	Very Valid
Student Worksheet Validation (LKS)	3.5	Very Valid

The table presents a summary of the validation results by all experts or validators. The validation of the CTL model based on Cognitive Distance received a score of 3.12, categorized as valid.

The content of CTL learning received a score of 3.4, also categorized as valid. The validation of the lesson plan (RPP) resulted in a score of 3.2, categorized as valid. The validation of the teacher's guidebook received a score of 3.5, categorized as valid, and the student worksheet (LKS) also received a score of 3.5, categorized as valid. According to the experts' overall findings, an average score of 3.32 was attained, with a category of "highly valid." Consequently, the CTL learning model can be implemented in schools.

a) Implementation

Results of the Practicality Test of the CTL Model Based on Cognitive Distance

Students' answers to a questionnaire used in the field trials can be used to assess the viability of applying the Contextual Teaching and Learning (CTL) model based on Cognitive Distance to improve students' Higher Order Thinking Skills (HOTS). According to the students, the Contextual Teaching and Learning (CTL) paradigm, which is based on Cognitive Distance, was a successful learning process. , the evaluation indicators such as clarity of lesson plan instructions, achievement of com Considering the outcomes of applying the Cognitive Distance-based CTL model petencies and objectives, student responses, level of difficulty in implementation, and adequacy of time obtained an 3.73 on average, classified as "very good."

Observations on the use of the CTL model based on Cognitive Distance, evaluated by the degree of implementation, showed an average score of 94.87%, categorized as "very active," indicating a "very good" assessment with "very active" responses. This finding was also supported by the results of student response observations, where students scored an average of 91.18%, categorized as "very active." The students responded very actively to the learning outcomes, indicating that the CTL model based on Cognitive Distance is practical for use in elementary schools.

Table 3. Summary of Practicality Results

Product Implementation	Score Obtained	Category
Teacher Implementation	94.87%	Slightly practical
Student Implementation	91.18%	Slightly practical

b) Evaluation Stage

Evaluation is the last phase of this research and development process. At this point, the researcher takes into account any comments or suggestions made by the product users teachers and fifth-grade elementary school students about the created learning model. The purpose of the evaluation is to give advice on the suggestions made by product users. Measuring the accomplishment of the research and development goals is the ultimate aim of the assessment operations.

The findings of earlier studies that demonstrate that the use of the Contextual Teaching and Learning (CTL) model can improve student learning outcomes are consistent with the topic of this study, especially in Social Sciences (IPS) subjects. Research by Sulfemi and Yuliani [16] confirms that the CTL model allows students to gain real learning experiences, which not only focus on cognitive aspects but incorporate critical and imaginative thinking abilities as well. The use of environmental miniature media in social studies learning, as they researched, can help students better understand abstract concepts and reduce verbalism, and raise the standard of education. This supports the findings of this research, where the Cognitive Distance-based

CTL paradigm can give learners authentic context, so that students more easily connect lesson material with everyday life situations, which ultimately improves Higher Order Thinking Skills (HOTS).

In addition, Hadiyanta [17] found that the use of the CTL method in social studies learning significantly increased student participation. In the first cycle, student learning participation reached 53.17, and rose in the second cycle to 78.86. This increase had a direct impact on student learning outcomes, which also increased. The findings of this study provide credence to the idea that enhancing students' active participation in the learning process has been achieved through the use of Cognitive Distance-based CTL. The findings of the practicality test indicated that both teachers and students responded favorably, with a practicality score of 94.87% for teachers and 91.18% for students, indicating that this model is very practical and can be applied effectively in the classroom. Hasibuan's [18] research also emphasizes that the CTL model does not only emphasize memorization, but more on developing in-depth understanding and applying knowledge in everyday life. This research supports this view by showing that through the application of concepts in real-world situations, the Cognitive Distance technique in CTL aids students in developing critical and creative thinking abilities. With this model, students are not only taught to understand the material passively, but are also encouraged to analyze, evaluate and create solutions to the problems given.

Overall, The findings of this study provide more proof that the CTL model, especially the Cognitive Distance-based one, can provide an effective solution for improving students' social studies learning outcomes and higher order cognitive abilities. The model's validity as determined by expert test results, with an average score of 3.32, shows that this model is ready to be implemented in schools. In addition, the high practicality of this model shows that teachers and students feel comfortable with its implementation, making this model a reliable approach in social studies learning to improve HOTS.

4 Conclusion

The research successfully developed and validated the Contextual Teaching and Learning (CTL) model based on Cognitive Distance to enhance Higher Order Thinking Skills (HOTS) in Social Studies (IPS) at Lubuk Pakam Elementary School. Expert validation results classified the model as valid with a score of 3.12. Classroom implementation demonstrated very high practicality, with a mean score of 91.18% for students and 94.87% for teachers. This model significantly improved students' HOTS, enabling them to analyze, evaluate, and create solutions more effectively. The learning process became more engaging and meaningful, as evidenced by active student participation and positive responses. Therefore, the CTL model based on Cognitive Distance offers an effective alternative to raise the standard of instruction in social studies and students' HOTS, and it is recommended for further research across other subjects and educational levels.

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