

## ENHANCING SCIENCE LEARNING OUTCOMES THROUGH THE COURSE REVIEW HORAY (CRH) COOPERATIVE LEARNING MODEL

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### ARTICLE INFO

#### Article History

Received: 24 Apr 2025

Revised: 25 Jun 2025

Accepted: 29 Jun 2025

Published: 30 Jun 2025

#### Keywords:

Cooperative Learning Model

Course Review Horay

IPAS

Learning Outcomes

Primary Education



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### ABSTRACT

This study aims to determine the learning outcomes of students taught using the Course Review Horay (CRH) cooperative learning model in the *IPAS* subject (*Ilmu Pengetahuan Alam dan Sosial*, translated as *Integrated Science and Social Studies*) for fifth-grade students at SD Inpres 2 Talise, a public elementary school in Palu, Indonesia. A quantitative approach was applied using a pre-experimental design, specifically the one-group pretest-posttest design. The population consisted of all fifth-grade students from classes V A and V B in the 2024/2025 academic year, totaling 34 students. The sample included 20 students from class V A, selected through random sampling. Data were collected using learning outcome tests, observation sheets, and interviews. Data analysis involved both descriptive and inferential statistics. The results showed an increase in the average score from the pretest (38.85) to the posttest (54.70). Statistical analysis using SPSS version 27 revealed a significant value of sig (2-tailed) = 0.001, which is less than 0.05. This indicates that the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_a$ ) is accepted, suggesting that the Course Review Horay (CRH) model significantly influences the improvement of students' learning outcomes in IPAS. These findings support the use of cooperative learning models, particularly CRH, as an effective strategy to enhance student engagement and achievement in primary school science education.

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**How to cite:**

Magfira, S., Sani, N. K., Zулnuraeni, Aras, N. F. (2025). Enhancing Science Learning Outcomes Through The Course Review Horay (CRH) Cooperative Learning Model. *Koordinat Jurnal Pembelajaran Matematika dan Sains*, 6(1), 74-81. <https://doi.org/10.24239/koordinat.v6i1.146>.

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**INTRODUCTION**

Education plays a pivotal role in enabling younger generations to realize their full potential across various domains. It must also equip students to adapt to rapid technological and social developments and solve increasingly complex problems in the future (Sani & Darmadi, 2025). This vision aligns with Indonesia's National Education Law No. 20 of 2003, which emphasizes the development of students' capabilities and character to form a dignified civilization and to contribute to national intellectual advancement (Erita, 2017; Sani et al., 2024). Learning, as a fundamental element of education, is essentially a communication process between teachers and students. Effective learning requires meaningful interaction to facilitate knowledge exchange and comprehension (Yuia et al., 2020). Learning is a complex process shaped by ongoing interactions between personal development and life experiences (Sumiantri & Ardiawan, 2023).

In Indonesia's primary education curriculum, IPAS—an integration of *Ilmu Pengetahuan Alam* (natural sciences) and *Ilmu Pengetahuan Sosial* (social sciences)—serves to nurture students' scientific literacy and inquiry skills (Hasanah et al., 2023; Sumiantri & Ardiawan, 2023). IPAS aims to foster curiosity, critical thinking, and real-world understanding by blending both scientific and social perspectives (Nuraeni, 2025). As a subject, IPAS not only imparts theoretical knowledge but also develops students' attitudes and practical skills necessary to comprehend their environment (Monika & Farida, 2022).

Despite these intentions, recent observations and interviews conducted at SD Inpres 2 Talise, a public elementary school located in Palu, Indonesia, reveal that student performance in IPAS remains suboptimal. Many students fail to meet the

minimum academic criteria, attributed largely to traditional teacher-centered methods such as lectures. This method, although convenient for teachers, limits student engagement and hinders conceptual understanding due to passive learning conditions. As a response to these pedagogical shortcomings, there is a growing need to explore active learning approaches, particularly cooperative learning strategies that promote collaboration and engagement.

One such approach is the Course Review Horay (CRH) cooperative learning model, which has demonstrated effectiveness in making learning enjoyable and participatory. CRH captures students' attention, reduces classroom tension through game-like elements, and fosters teamwork (Sumiantri & Ardiawan, 2023; Yuia et al., 2020). However, the model also presents challenges such as potential dishonesty and time management issues, which require structured supervision and effective time allocation (Laili & Peatiwi, 2023; Mutiara et al., 2019).

Several studies have examined cooperative learning and its benefits in mathematics; however, limited empirical research focuses on CRH specifically within the IPAS context in Indonesian primary schools (Amiirroh et al., 2023; Mahdiyah et al., 2019; Ningrum et al., 2019). This study seeks to fill that gap by analyzing the implementation of the CRH model in improving IPAS learning outcomes among fifth-grade students at SD Inpres 2 Talise. By addressing this gap, the research aims to contribute new insights into the application of cooperative learning in multidisciplinary education settings and offer practical recommendations for classroom implementation.

## METHOD

This research adopted a quantitative approach to assess the effectiveness of the Course Review Horay (CRH) cooperative learning model in improving student learning outcomes in the IPAS subject. A pre-experimental method, specifically the one-group pretest-posttest design, was utilized. This design involved a single group of participants who were tested before and after receiving the instructional intervention. The structure of this design followed the O1-X-O2 format, where O1 represented the pretest, X denoted the application of the CRH model, and O2 referred to the posttest.

The study was conducted at SD Inpres 2 Talise, a public primary school located in Palu, Central Sulawesi, Indonesia, during the odd semester of the 2024/2025 academic year. The research process included several key stages, beginning with preliminary observations and interviews and validation of the research instruments by experts and through pilot testing at another school. The field research officially commenced after obtaining the necessary research permits and school approval.

The population of the study comprised all fifth-grade students at SD Inpres 2 Talise, totaling 34 individuals. A sample of 20 students from class V-A was selected using saturated sampling, considering the relatively small population size. The sample group served as the experimental group for this study.

Data were gathered from both primary and secondary sources. Primary data included the results of cognitive tests administered before and after the intervention. Secondary data were obtained through classroom observations and interviews with teachers and students. The types of data collected encompassed both quantitative and qualitative elements. Quantitative data were derived from a multiple-choice test designed to measure students' understanding of IPAS concepts,

while qualitative data were collected using observation sheets and interview guidelines.

The study focused on two primary variables: the independent variable was the implementation of the CRH model, and the dependent variable was student learning outcomes in the IPAS subject. To ensure the reliability and validity of the instruments, a series of analyses were conducted. Validity testing employed Pearson's product-moment correlation, revealing that 13 out of 15 test items were valid, with a significance level of 0.05 and a correlation coefficient greater than the critical value ( $r\text{-count} > r\text{-table} = 0.788$ ). Reliability was assessed using Cronbach's Alpha, with the resulting coefficient of 0.788 indicating a high level of reliability.

The data analysis process involved both descriptive and inferential statistical methods. Descriptive statistics, such as mean, minimum, maximum, and standard deviation, were used to provide an overview of student performance. Inferential analysis included a normality test using the Shapiro-Wilk method and hypothesis testing through a paired sample t-test, both conducted using SPSS software. The significance level was set at 0.05. A p-value less than 0.05 indicated a statistically significant improvement in learning outcomes after the intervention.

## RESULT AND DISCUSSION

This study employed an experimental design with pre-test and post-test assessments to evaluate the effectiveness of the Course Review Horay (CRH) learning model in enhancing students' academic performance in the topic of the human respiratory system. Prior to implementing the CRH model, the test instrument used was validated by subject matter experts and pilot-tested on students at SDN 2 Talise, who shared similar academic characteristics with the research participants. Out of 15 planned items, 13 were deemed valid and were categorized under Bloom's Taxonomy levels C3 (Application) and C4 (Analysis).

Table 1. Distribution of Valid Test Items Based on Bloom's Taxonomy

Taxonomy Level	Item Numbers	Number of Items
C3 (Application)	5, 6, 7, 8, 13, 14, 15	7
C4 (Analysis)	3, 4, 9, 10, 11, 12	6

In the pre-test phase, the students' average score was 38.85, with a standard deviation of 7.686, suggesting that the students' understanding of the material was relatively low. The minimum score recorded was 30, while the maximum score reached 56. These results highlighted the need for an intervention to boost the students' comprehension of the topic. Subsequently, the CRH model was implemented, which consists of eight distinct phases, each designed to progressively engage students, enhance their understanding, and improve their learning outcomes.

The first phase of the CRH model involved presenting the learning objectives to the students. Clearly articulating the learning goals provided students with a roadmap of what they were expected to achieve. This aligns with the principles of constructivist learning theory, which emphasizes that when learners understand the goals of learning, they are more likely to actively construct knowledge (Ibda, 2015). Providing clear objectives helps activate students' prior knowledge and set expectations, which is essential for maintaining focus and motivation (Marzano, 2009). Similar findings were reported by Sari et al. (2021), who noted that clearly communicated learning objectives significantly improved students' engagement in cooperative settings.

In the second phase, the researcher demonstrated and presented the learning materials using multimedia—starting with a video on the human respiratory system, followed by direct explanation. This approach reflects Mayer's Cognitive Theory of Multimedia Learning, which posits that students learn better when information is presented through both visual and verbal channels (Mayer, 2009). The use of videos and visual representations helped reduce the cognitive load, making complex concepts such as the structure and function of the respiratory system more comprehensible.

This is supported by research from Prastowo et al. (2020), who found that multimedia-assisted instruction significantly enhanced students' comprehension in science subjects.

The third phase facilitated student questioning and group discussions, which are core to social constructivist theory (Ibda, 2015). By working collaboratively, students engaged in peer-to-peer scaffolding, helping each other understand difficult concepts. This process not only deepened their conceptual understanding but also enhanced critical thinking skills. Consistent with Johnson and Johnson (1999), cooperative learning fosters positive interdependence and individual accountability, which were both evident as students worked together to complete the worksheets and clarify misunderstandings.

In the fourth phase, students created grids and answered questions related to the lesson. This task encouraged active learning and allowed students to engage in self-assessment and problem-solving, critical components in fostering deeper understanding (Prince, 2013). The hands-on nature of this activity supports the experiential learning model, where students apply knowledge in practical contexts, enhancing retention and comprehension.

The fifth phase involved immediate feedback, where correct answers were marked with (✓) and incorrect ones with (X). Immediate feedback is a well-established strategy in formative assessment (Black & Wiliam, 2006), known to improve student learning by helping learners quickly identify and correct misconceptions. This also fosters metacognitive awareness, as students reflect on their mistakes and adjust their learning strategies accordingly.

The sixth phase introduced a gamification element where students who successfully formed a line with correct answers could shout "Horay!" This mechanism is grounded in the Self-

Determination Theory (Deci & Ryan, 2000), which highlights that intrinsic motivation increases when learning includes elements of fun, challenge, and a sense of accomplishment. Research by Su & Cheng (2015) similarly found that gamified learning environments significantly improve student engagement and motivation.

Overall, each phase of the CRH model not only provided structured learning activities but also aligned with established learning theories that emphasize active engagement, social interaction, multimodal input, and motivation enhancement. This alignment explains why the CRH strategy was effective in improving student learning outcomes in the IPAS subject.

In phase seven, students' performance was further evaluated based on the number of "Horay" cheers they earned. The students with the most correct answers and the highest number of cheers received rewards. This phase aimed to increase student motivation by recognizing and rewarding their active participation and achievement. It also served as an incentive for students to stay engaged and strive for excellence, fostering a competitive yet supportive learning environment.

The final phase, phase eight, involved concluding the lesson. At the end of the session, students were asked to jot down key takeaways from the lesson in their notebooks, summarizing what they had learned. This final reflection allowed students to consolidate their understanding and retain the core concepts. The session ended with a joint review and summary of the key points of the lesson, guided by the researcher. This reflective practice not only reinforced the students' learning but also encouraged them to think critically about the material and its relevance to their broader knowledge.

The results from the post-test indicated a significant improvement in student performance, with the average score rising to 54.70 (SD = 14.342) and the highest score reaching 76. Statistical analysis using paired t-tests revealed that this improvement was statistically significant ( $p = 0.001$ ,  $p < 0.05$ ). These findings demonstrate that the CRH model was effective in enhancing

students' academic performance on the topic of the human respiratory system.

These results align with previous studies that have suggested the effectiveness of the CRH learning model in improving both student engagement and learning outcomes (Bety Ratih Meganingtyas, Retno Winarni, 2019; Dianika et al., 2018; Hermawan et al., 2018; Widat et al., 2023). (Monika & Farida, 2022) found that CRH significantly improved teacher activity, student engagement, and student learning outcomes. Similarly, (Farhatulmillah et al., 2022) reported an increase in student activity and academic achievement following the implementation of CRH. Furthermore, (Laili & Peatiwi, 2023; Ningrum et al., 2019) concluded that CRH not only improves student performance but also fosters a more interactive and effective learning process. This study corroborates these findings, reinforcing the notion that CRH can provide an engaging and dynamic learning environment that boosts student understanding and academic success.

## CONCLUSION

Based on the data analysis and the results obtained from this study, it can be concluded that the implementation of the cooperative learning model, specifically the Course Review Horay (CRH) type, has a significant impact on improving the learning outcomes of students in the IPAS (Ilmu Pengetahuan Alam dan Sosial) subject for grade V students at SD Inpres 2 Talise. This conclusion is supported by the post-test results, where the average score for class V A, using the CRH model, was 54.70. The statistical analysis, conducted using the Paired Sample T-Test, yielded a significance value of 0.001. Since this value is less than the significance level of 0.05, the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_a$ ) is accepted. These findings indicate that the CRH cooperative learning model significantly contributes to enhancing the academic performance of students in the IPAS subject.

This study provides important implications for educators and practitioners in the field of education, particularly in promoting interactive and engaging learning

methods. The CRH model has shown to not only improve academic achievement but also increase student engagement and motivation, making it a viable approach for fostering better learning outcomes. However, the study's limitations include its focus on a specific grade level and school, which may limit the generalizability of the findings. Future research could explore the application of the CRH model in different educational contexts, including various subjects and age groups, to further validate and expand upon these findings.

#### ACKNOWLEDGMENT

The author would like to express sincere gratitude to all those who contributed to the completion of this research. Special appreciation is extended to the academic advisor, whose guidance, insights, and constructive feedback were invaluable throughout the research process. The author is also thankful to the faculty and staff of SD Inpres 2 Talise for their cooperation and support during the data collection phase, as well as to the students who actively participated in the study. Lastly, the author wishes to thank all individuals and institutions who provided learning materials and resources that facilitated the effective implementation of the Course Review Horay (CRH) learning model in this study.

#### AUTHOR CONTRIBUTIONS

Author One: Conceptualization, investigation, data curation, writing – original draft, visualization.

Author Two/Corresponding Author: Methodology, formal analysis, writing – review & editing, project administration, corresponding author.

Author Three: Supervision, validation, resources.

Author Four: Validation, writing – review & editing.

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