



Implementation of Culturally Responsive Teaching in Informatics Learning for Grade VII and VIII Students at UPT SMP Negeri 1 BPR Ranau Tengah

Ismal¹, Supandi², Andi Priyolistiyanto³, Wijayanto⁴
PGRI University Semarang, Indonesia

Author. E-mail: ismalranau@gmail.com supandi@upgris.ac.id andipriyolistiyanto@upgris.ac.id

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Abstract

This study aims to analyze the application of the Culturally Responsive Teaching (CRT) approach in Informatics learning for seventh and eighth grade students at the UPT SMP Negeri 1 BPR Ranau Tengah. CRT is a pedagogical approach that considers students' cultural backgrounds as an important factor in the learning process. The research method used is descriptive qualitative, with data collection techniques including observation, interviews, and documentation. The results show that the application of CRT can increase student engagement, strengthen cultural identity, and encourage improved learning outcomes. Teachers integrate local culture into learning projects, utilize community-based technology, and implement differentiated approaches based on student backgrounds. This approach creates a more inclusive and participatory classroom environment; previously passive students become more confident because the material feels relevant to their lives. Teachers also become more responsive to students' diverse needs and potential, enabling them to design adaptive and contextual learning activities. Informatics learning serves not only as a means of transferring technological knowledge but also as a platform for building cultural awareness, collaborative skills, and critical thinking skills. These findings underscore the importance of integrating local values and cultural wisdom in 21st-century learning. Therefore, support from school principals, communities, and educational stakeholders is needed for the sustainable development of culture-based learning practices.

Keywords: Informatics, Culturally Responsive Teaching, Culture-Based Learning, Middle School

Abstrak

Penelitian ini bertujuan untuk menganalisis penerapan pendekatan Culturally Responsive Teaching (CRT) dalam pembelajaran Informatika bagi siswa kelas VII dan VIII di UPT SMP Negeri 1 BPR Ranau Tengah. CRT merupakan pendekatan pedagogis yang mempertimbangkan latar belakang budaya peserta didik sebagai faktor penting dalam proses pembelajaran. Metode penelitian yang digunakan adalah deskriptif kualitatif, dengan teknik pengumpulan data berupa observasi, wawancara, dan dokumentasi. Hasil penelitian menunjukkan bahwa penerapan CRT dapat meningkatkan keterlibatan siswa, memperkuat identitas budaya, dan mendorong peningkatan hasil belajar. Guru mengintegrasikan budaya lokal dalam proyek pembelajaran, memanfaatkan teknologi berbasis komunitas, serta menerapkan pendekatan diferensiasi sesuai latar belakang siswa. Pendekatan ini menciptakan suasana kelas yang lebih inklusif dan partisipatif; siswa yang sebelumnya pasif menjadi lebih percaya diri karena materi terasa relevan dengan kehidupan mereka. Guru pun menjadi lebih responsif terhadap kebutuhan dan potensi siswa yang beragam, sehingga mampu merancang aktivitas belajar yang adaptif dan kontekstual. Pembelajaran Informatika tidak hanya menjadi sarana transfer pengetahuan teknologi, tetapi juga wadah untuk membangun kesadaran budaya, keterampilan kolaboratif, dan kemampuan berpikir kritis. Temuan ini menegaskan pentingnya integrasi nilai-nilai lokal dan kearifan budaya dalam pembelajaran abad ke-21. Oleh karena itu, diperlukan dukungan dari kepala sekolah, komunitas, dan pemangku kepentingan pendidikan agar praktik pembelajaran berbasis budaya dapat berkembang secara berkelanjutan.

Kata Kunci: Informatika, Culturally Responsive Teaching, Pembelajaran Berbasis Budaya, SMP

INTRODUCTION

Education in the era of globalization demands responsiveness to students' cultural diversity. One approach considered relevant is Culturally Responsive Teaching (CRT), which encourages recognition of students' cultures as a strength in learning (Gay, 2018). In the context of Informatics learning, this approach allows for the integration of local context into learning materials and methods, thus creating more meaningful and contextual learning. However, at the UPT SMP Negeri 1 BPR Ranau Tengah, Informatics learning tends to be general and does not fully consider students' local cultural aspects. Previous research has shown that integrating cultural values into education can create a more inclusive, relevant, and meaningful learning space, both socially and academically (Rowan et al., 2021; Brummelen & Lin, 2020). Both emphasize that engaging students through a culture-based curriculum can increase effectiveness and participation in the learning process.

Based on these issues, this study focuses on how implementing a CRT approach can strengthen the informatics learning process in schools with diverse cultural backgrounds. Suryani (2022) in the *Edumatic Journal* also emphasized the importance of a learning approach that considers students' cultural characteristics to create a more active, adaptive, and enjoyable learning environment.

Culturally Responsive Teaching (CRT) is a learning approach that places students' culture at the center of the educational process. Gay (2018) defines CRT as using students' cultural knowledge, prior experiences, and learning styles to make learning more relevant and effective. This opinion is reinforced by Hammond (2020), who emphasizes the importance of empathetic relationships between teachers and students, where understanding cultural backgrounds is key to building bridges

between subject matter and students' real lives. Furthermore, Ladson-Billings (2021) explains that CRT is not only about recognizing cultural differences but also an active effort to challenge inequities in the education system and promote learning equity. Banks and Banks (2021) also state that culturally responsive education includes the integration of content from various ethnic groups into the curriculum as well as teaching methods that suit diverse learning styles. Furthermore, Paris and Alim (2022) develop this concept into Culturally Sustaining Pedagogy, an approach that is not only responsive but also maintains and celebrates students' cultural identities in an ever-changing world. In line with this, Howard (2020) emphasized the importance of teachers' critical awareness of personal and systemic bias so that CRT implementation can be carried out fairly and reflectively.

The success of CRT implementation depends heavily on teachers' intercultural competence and the appropriateness of the local context in the learning process. Romijn et al. (2021) found that improving teachers' intercultural competence significantly correlated with the success of CRT implementation, especially in multicultural classrooms. Furthermore, Panicker (2020) added that the Technology Acceptance Model (TAM) is more effective when adapted to cultural values, so digital learning approaches should also consider students' cultural backgrounds. In the Indonesian context, Lestari & Kurniawan (2021) demonstrated that developing multimedia-based teaching materials with local cultural content can improve students' understanding and learning interest. Rijal et al. (2024) also stated that culture-based digital media not only facilitates 21st-century learning but also serves as a means of contextual and meaningful transfer of local cultural values. These findings reinforce the importance of learning design that considers the interaction

between technology, cultural values, and teacher preparedness.

The application of CRT in Informatics learning can be achieved by integrating local cultural elements into various activities such as simple software development, digital presentations, and visual programming. Leonard & Sentance (2021) emphasize the importance of teachers connecting digital content to students' cultural identities to create inclusive and meaningful learning experiences. More broadly, Lin (2021) highlights the "justice-centered computer science education" approach, which emphasizes how technology and informatics can be used as tools to build social justice and cultural awareness. This aligns with the concept of culture-based Informatics learning, which aims not only to master technology but also to shape students' character and respect for local identities and values. Thus, culturally responsive Informatics learning not only develops digital skills but also strengthens a sense of belonging to one's own culture and community.

RESEARCH METHODS

This type of research is descriptive qualitative. Data collection techniques include observation of the learning process, interviews with teachers and students, and documentation of learning tools and student work. Data analysis techniques use thematic analysis through three stages: (1) data reduction, (2) data presentation, and (3) drawing conclusions. Data validity is maintained through triangulation of sources and methods.

The sample size in this study was 32 students selected purposively from a total population of 455 students in grades VII and VIII at the UPT SMP Negeri 1 BPR Ranau Tengah. An additional instrument in the form of a student engagement questionnaire towards CRT-based Informatics learning was used to measure the level of student participation, interest, and perception of the applied learning approach. Data from this

questionnaire were processed quantitatively to complement the qualitative data from observations and interviews.

This study used thematic analysis to explore the application of Culturally Responsive Teaching (CRT) in Informatics learning. The analysis was conducted on data obtained from classroom observations, interviews with teachers and students, and documentation of learning activities. Data Reduction, Data Presentation, and Conclusion Drawing were carried out.

To ensure the validity of the data in this study, the researcher implemented a validity strategy that is in accordance with the qualitative approach. One of the techniques used is triangulation, both in terms of sources and methods, to obtain objective and comprehensive information. Source Triangulation, Method Triangulation

RESULTS AND DISCUSSION

Informatics learning activities linked to local culture, such as documenting local traditions using presentation processing applications, increase student participation and pride in their cultural heritage. Community-based project activities become a forum for actualizing cultural values in the digital world. Observations show that student engagement increases when Informatics learning is linked to local cultural practices, such as developing digital projects that document local wisdom. This is consistent with the research findings of Salma & Yuli (2023), which emphasizes the importance of building teachers' understanding of CRT to enable them to integrate culture into the learning process.

Based on observations in grades VII and VIII in Informatics, it was found that teachers had begun integrating local cultural elements into digital project assignments. One example was the assignment to create a video tutorial on traditional agricultural technology. During this assignment, students appeared more active in discussions, both with their classmates and family members. Learning activities became more contextual

as students linked learning content to their experiences and the cultural realities around them. Teachers also guided students to use digital tools creatively, such as video recording, editing, and presenting their work through digital platforms. These activities demonstrate that the Culturally Responsive Teaching (CRT) approach is beginning to be implemented, although not yet fully systematically.

Interviews with Informatics teachers revealed that a culture-based learning approach positively impacts student enthusiasm. Teachers reported that students were more enthusiastic and actively engaged when given digital projects with local themes, such as creating video tutorials on the use of traditional agricultural technology. These activities were deemed effective in increasing student engagement because the material developed was rooted in their experiences and everyday lives.

Interviews with teachers showed that student engagement increased when learning tasks were linked to local culture. Students were more enthusiastic and active because they felt the topics were relevant to their daily lives, even triggering family involvement in the learning process. Teachers expressed a strong desire to implement learning that takes students' cultural backgrounds into account. However, limited training and practical guidance meant that the implementation of this approach was suboptimal and still carried out independently. Interviews with Informatics teachers in 2025 revealed that the implementation of this approach was suboptimal due to limited training and practical guidance, and therefore still carried out independently.

Table 1. Findings from Teacher Interview Results

However, teachers also expressed challenges in implementing the Culturally Responsive Teaching (CRT) approach, particularly related to the lack of in-depth training on CRT principles and strategies.

Teachers felt they lacked the competencies

Informant Code	Statement	Theme	Information
G-01	"Children are much more enthusiastic when their assignments relate to local culture, such as making a video about traditional farming tools. They even discuss the tasks with their parents or grandparents, making the learning experience more meaningful and engaging."	Student responses to culture-based learning	Students show more enthusiasm when assignments are linked to local culture. Students show more enthusiasm when assignments are linked to local culture.
G-01	"We really want to implement learning that takes students' cultural backgrounds into account. But we've never received any specific training on that, so we're still figuring it out on our own."	Challenges of CRT implementation	Teachers experience difficulties due to lack of training on the CRT approach.

to systematically integrate this approach into lesson planning and implementation. This statement aligns with the findings of Rowan et al. (2021), who emphasized that the success of multicultural education is highly dependent on teachers' pedagogical preparedness. Furthermore, teachers emphasized the importance of training and support from schools and relevant agencies to ensure optimal implementation of the CRT approach. This is reinforced by Dewi (2022), who emphasized the importance of mapping students' cultural backgrounds in designing contextual and inclusive digital learning.

Most students expressed joy because they felt their culture was appreciated. They also found it easier to grasp technological concepts when they related them to everyday activities in their hometowns.

Table 2. Results of the Student Engagement Questionnaire (n = 32):

Aspect	Maximum Score	Average Score	Percentage (%)
Interest in culture-based materials	5	4.3	86%
Active participation during practice	5	4.5	90%
Understanding Informatics concepts	5	4.1	82%
Satisfaction with learning	5	4.4	88%



Figure 1. Diagram of Student Involvement in CRT-Based Informatics Learning

Figure 1 shows a horizontal bar graph depicting the results of a student engagement questionnaire based on four aspects: interest in culturally based materials, active participation during practical work, understanding of computer science concepts, and satisfaction with learning.

The graph shows that:

1. Active participation during practical work achieved the highest score at 90%, indicating that students were highly engaged while working on culturally based assignments.
2. Satisfaction with learning followed closely behind at 88%, indicating that this learning approach provided a positive learning experience for students.
3. Interest in culturally based materials and understanding of computer science concepts reached 86% and 82%, respectively, reflecting students' positive responses to content linked to local culture and the contextual use of technology.

The findings from this graph reinforce previous observations and interviews, which showed that implementing a Culturally Responsive Teaching (CRT) approach in Informatics learning can increase student

engagement and satisfaction. High levels of active participation indicate that learning projects that emphasize cultural context encourage students to be more active, creative, and collaborative in their learning activities.

The high level of learning satisfaction indicates that culture-based learning provides relevant and meaningful experiences for students, thus contributing to increased learning motivation. Although the score for understanding Informatics concepts fell below the other three aspects, the score remained high, indicating that academic material can be more easily understood when linked to students' cultural experiences. These data also support previous findings in the literature, such as Dewi (2022) who emphasized the importance of mapping students' cultures in designing digital materials, and Rowan et al. (2021) who highlighted teachers' readiness to implement inclusive and culturally relevant learning approaches. The bar graph analyzed in this study shows that student engagement scored highest, followed by learning satisfaction, indicating that the CRT approach significantly encouraged students' active participation in the learning process. Thus, these findings confirm that the implementation of CRT has a significant impact on student motivation and understanding in Informatics learning.

CONCLUSION

The implementation of Culturally Responsive Teaching (CRT) in Informatics learning at the UPT SMP Negeri 1 BPR Ranau Tengah has been proven to increase student engagement, understanding, and participation. By integrating local culture into the learning process, students feel more emotionally and cognitively connected to the material presented. This study recommends the continued development of culturally context-based teacher training and curriculum development.

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