

Integrating 21st-Century Skills in English Reading Materials for Eight Grade Students

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Abstract

In 21st-century learning, teaching materials must integrate the 4Cs skills (collaboration, communication, critical thinking, and creativity) to empower the younger generation in facing rapid digital transformation. This study addresses the lack of student learning materials, particularly in reading skills, where students struggle to comprehend texts and apply the 4Cs due to limited facilities. The aim is to develop reading materials for teachers and students that incorporate the 4Cs, aligned with 21st-century education, using the Jigsaw technique. The methodology follows Classroom Action Research, involving data collection, analysis, interpretation, and action planning. Data were gathered from student works, grade lists, and observation sheets. Results indicate that the Jigsaw cooperative technique enabled most students to integrate the 4Cs into their learning process. This study suggests that the developed materials can be further adapted into hybrid or AI-assisted platforms to strengthen digital literacy, enhance engagement, and support sustainable education in the era of Artificial Intelligence and global digital transformation.

Keywords: 21st_Century_Learning; 4Cs_Skills; Reading_Skills; Digital_Transformation; Learning_Material

1. Introduction

Education plays a crucial role in shaping the quality and capabilities of the new generation, enabling them to adapt to the rapid changes in global civilization. As education evolves with the times, it places increasing demands on stakeholders to innovate. In Indonesia, the Ministry of Education, Culture, Research, and Technology must upgrade regulations to align with 21st-century learning needs. This aligns with Government Regulation No. 57 of 2021 on National Education Standards, which emphasizes that "education in Indonesia requires national standards that adapt to the dynamics of science, technology, and societal developments to enhance educational quality". Consequently, students need learning materials that equip them with survival skills for contemporary life. A key requirement in 21st-century education is mastery of the 4Cs competencies—collaboration, communication, creativity, and critical thinking—tailored to the era's demands [1].

Recent research highlights 21st-century learning as a "process-supporting system" that creates an effective context for learners [2]. Integrating these skills not only boosts student achievement but also enhances confidence, self-efficacy, and readiness for future careers [3]. In the context of English as a Foreign Language (EFL), instructional materials must embed the 4Cs to foster interactive and engaging processes.

In the context of English as a Foreign Language (EFL), the development of instructional materials becomes particularly crucial [4]. Among the four language skills, Reading is regarded as a pivotal skill among the four core language competencies because of its strong association with learners' academic achievement and their ability to access knowledge [5]. Within many EFL contexts, reading serves not merely as a tool for language development but also as an entry

point to a wider range of educational resources, given that much of the world's scientific and academic information is presented in written English [6]. Effective reading instruction therefore requires carefully designed materials that are not only linguistically appropriate but also engaging and relevant to learners' experiences.

Contemporary studies underscore that developing EFL materials should promote joyful, culturally relevant learning while addressing learners' needs through needs analysis [7]. This involves accommodating students' wants in language skills, components, methods, media, themes, time allocation, roles, assessments, and other elements [8]. With the shift to Kurikulum Merdeka in Indonesia, materials must integrate 4Cs explicitly, especially in hybrid or digital formats to bridge facility gaps in rural areas.

However, many teachers still overlook 21st-century integration. Preliminary observations at SMP 01 Plus Sunan Kalijogo Junior High School on October 4, 2022, revealed students' reliance on limited worksheets (LKS), which contain only questions without supporting materials. Teacher interviews confirmed facility limitations as a primary barrier. To address this, we propose 4Cs-integrated reading materials using the Jigsaw technique, aligning with current trends in cooperative learning for EFL [9]. Through this technique, reading activities can be transformed into interactive, student-centered tasks that not only enhance comprehension, but also nurture collaboration, communication, creativity, and critical thinking in line with 21st century learning goals.

2. Methodology

This study employs a Classroom Action Research (CAR) design to address classroom issues, involving identifying focus areas, data collection, analysis, interpretation, and action planning [10]. Initial data analysis led to an action plan: developing English reading materials integrated with 4Cs skills. Materials were created as printable handouts (with optional LCD integration for low-resource settings) focusing on recount texts. Presentation used the Jigsaw technique to enhance student engagement, supplemented by Barrett's Taxonomy questions as success indicators [9], [11].

The research began with preliminary observations on October 4, 2022, identifying material deficiencies. Implementation occurred at SMP 01 Plus Sunan Kalijogo, Tulang Bawang, Lampung, involving 22 eighth-grade students in an Islamic boarding school setting under the K13 curriculum (transitioning to Kurikulum Merdeka) [12]. Collaboration included the English teacher and principal.

Data collection followed Creswell's Taxonomy of Action Research: (a) Experiencing (classroom observations and field notes as participant-observers); (b) Enquiring (informal interviews with teachers, students, and stakeholders); (c) Examining (analysis of documents, audio/video recordings, and field notes) [10]. Analysis was qualitative descriptive, describing student 4Cs engagement and Barrett's Taxonomy responses.

Barrett's Taxonomy questions (detailed below) align with Higher-Order Thinking Skills (HOTS), supporting 21st-century competencies under Kurikulum Merdeka [13].

Table 1. The explanation of Barrett's Taxonomy

No.	Barrett's Taxonomy	Questions
1.	Literal comprehension (Recognition & Recall)	Underline the conjunction words in the text above.
2.	Reorganization	What is the main idea of the text above?
3.	Inferential Comprehension	Could you describe this story in a couple of words?
4.	Evaluation	Was this a good story?
5.	Appreciation	Do you think it is a happy/sad/frightening story?

Question 1 emphasizes recognition and recall (critical thinking, HOTS C4 level). Question 2 involves reorganization and analysis (C4). Question 3 focuses on inferential comprehension (C6). Question 4 requires evaluation (C5). Question 5 promotes appreciation and response (C4) [13].

3. Result and Discussion

3.1. Result

The implementation of 4Cs-integrated reading materials using the Jigsaw technique was carried out at SMP 01 Plus Sunan Kalijogo, involving 22 eighth-grade students (6 girls in Group 1, 5 girls in Group 2, and 11 boys in Group 3). The materials emphasized recount texts and comprehension activities guided by Barrett's Taxonomy.

The results indicate that most students successfully engaged with the 4Cs skills (collaboration, communication, critical thinking, and creativity) during the learning process. Group 1 and Group 2 demonstrated effective teamwork, strong communication, and creativity, reflected in timely submissions and balanced task distribution. Group 3, however, showed weaker collaboration, with only a few students actively contributing.

Student comprehension was also assessed through Barrett's Taxonomy. Groups 1 and 2 performed well in literal and inferential comprehension, with Group 1 excelling in reorganization and evaluation, while Group 2 scored higher in appreciation. Group 3 consistently underperformed across all categories.

Table 2. Result and scores in Barrett's Taxonomy (max score 20/each)

No.	Barrett's Taxonomy	Questions	Group 1	Group 2	Group 3
1	Literal Comprehension	Underline conjunction words...	20	20	2
2	Reorganization	Main idea...	20	15	2
3	Inferential Comprehension	Describe story...	20	20	2
4	Evaluation	Good story?	20	2	2
5	Appreciation	Happy/sad/frightening?	2	15	2

These results reveal clear differences in students' comprehension and engagement, where cooperative groups (1 and 2) showed higher achievement, while Group 3 struggled due to limited participation and weak collaboration.

3.2. Discussion

The results demonstrate that integrating 4Cs into English reading materials through the Jigsaw technique can significantly enhance student engagement and comprehension. Groups with balanced participation and effective communication outperformed groups with poor collaboration, supporting the argument that cooperative learning promotes Higher-Order Thinking Skills (HOTS).

These findings align with previous studies that highlight the effectiveness of Jigsaw in fostering critical thinking, teamwork, and comprehension in EFL classrooms [14], [15]. However, the underperformance of Group 3 indicates that group composition and dynamics strongly influence outcomes. This is consistent with Vives et al. [15] who note that mixed-gender or larger groups often face challenges in maintaining cohesion.

The study also confirms earlier observations that inadequate facilities and low motivation hinder the development of 21st-century skills. While the use of Jigsaw increased engagement for about half of the students, others—particularly in Group 3—remained passive. This finding echoes Ibnusaputra et al. [16], who argue that integrating digital platforms into cooperative tasks may bridge facility gaps and sustain motivation.

Teachers' efforts in applying Jigsaw and Genre-Based Approach (GBA) were found to be effective in encouraging collaboration, communication, and critical text analysis. Yet, time limitations reduced opportunities for deeper cross-group sharing, suggesting that hybrid or AI-assisted adaptations could optimize outcomes in resource-limited contexts.

Overall, this study strengthens evidence that cooperative learning, when integrated with 21st-century skills, enhances reading comprehension and student-centered learning in EFL classrooms. At the same time, it highlights the importance of addressing group dynamics, teacher facilitation, and facility support to maximize benefits.

4. Conclusion

This study concludes that limited teacher creativity and inadequate facilities have constrained the integration of 4Cs, although Jigsaw-enhanced materials contributed to improved student engagement and skill development. Challenges concerning enthusiasm, media, and creativity may be addressed through digital integration within Kurikulum Merdeka, alongside government efforts to ensure equitable facilities. Given the short research duration, extended studies are needed to observe long-term progress, while the use of AI tools for personalized materials and the adoption of a hybrid Jigsaw model are suggested to support EFL instruction in rural areas.

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6. Reference

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