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***DIFFERENTIATED INSTRUCTION AND THE 21ST CENTURY SKILLS  
OF SENIOR HIGH SCHOOL LEARNERS***

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**ABSTRACT**

The study aimed to examine the level of differentiated instruction implemented among senior high school learners, describe the learners' development in 21st century skills, and determine the significant relationship between differentiated instruction and learners' 21st century skills. The respondents consisted of 162 senior high school learners enrolled at Kitubo National High School, Kitaotao III District, Division of Bukidnon, during the School Year 2025–2026. Total enumeration sampling was utilized to include all learners who met the study criteria. A researcher-made survey questionnaire was employed to measure the implementation of differentiated instruction and the development of learners' 21st century skills. Reliability testing yielded a Cronbach's alpha of 0.952, indicating very high internal consistency and confirming the reliability of the research instrument. Findings revealed that differentiated instruction was perceived by learners as highly implemented in terms of teaching approaches, assessment and feedback, and classroom environment. Teachers used varied explanations, examples, and participatory strategies that enhanced learner understanding and engagement. Assessment practices were generally constructive and varied; however, reflective tasks, opportunities for revision, and consistent recognition of learner achievements were less emphasized, indicating areas that may require further instructional support. Results also showed that learners demonstrated high proficiency in critical thinking, problem-solving, communication, collaboration, creativity, and innovation. Learners actively analyzed information, asked questions, and worked effectively with peers, reflecting strong engagement in essential 21st century skills. Nevertheless, practices related to providing feedback, reflecting on learning, and taking creative risks were less frequently observed. Further analysis revealed a strong and positive relationship between differentiated instruction and the development of learners' 21st century skills. The findings underscore the importance

of sustaining learner-centered and adaptive instructional practices to support holistic and meaningful skill development among learners.

**KEYWORDS:** differentiated instruction, pedagogical strategy, 21st century skills, senior high school learners.

## INTRODUCTION

The integration of 21st-century skills into classroom instruction has become a critical priority for educators worldwide. In the Philippine senior high school context, this demand is further magnified as learners are expected to acquire not just content knowledge, but also competencies such as critical thinking, creativity, communication, collaboration, and digital literacy to thrive in a competitive and complex society. However, traditional approaches to teaching, which often rely on uniform instruction and passive learning, have proven inadequate in cultivating these multifaceted skills. Learners with diverse interests, readiness levels, and learning profiles are frequently underserved in such environments, resulting in disengagement, uneven performance, and limited real-world application of learning.

One of the growing concerns in the country's senior high school classrooms is the persistent mismatch between instructional delivery and learner diversity. Despite being equipped with the prescribed curriculum and learning materials, many teachers struggle to effectively differentiate instruction to suit varied learner needs. While some learners are ready for advanced tasks and independent exploration, others require scaffolded support and alternative strategies to grasp fundamental concepts. This instructional imbalance hampers the development of essential 21st-century competencies, especially among learners in public schools, where resources, class sizes, and teacher-to-learner ratios pose additional barriers. Thus, there arises a compelling need for pedagogical innovation that ensures inclusivity, learner engagement, and skills development across different learning modalities.

Differentiated instruction (DI) emerges as a viable solution to this pressing educational dilemma. Rooted in the principle of learner-centered teaching, DI calls for the intentional modification of content, process, product, and learning environment based on individual learner profiles. Teachers who implement DI strategies provide learners with varied ways to access content, engage with ideas, and demonstrate understanding. In this way, DI not only addresses academic diversity but also fosters higher-order thinking, creativity, collaboration, and autonomy—hallmarks of 21st-century learning. However, despite its theoretical promise, the actual practice of differentiation remains underutilized or misunderstood in many senior

high school classrooms, especially in the Philippines, where rigid structures and limited professional development opportunities often hinder instructional innovation.

Several Filipino studies have shown that differentiated instruction can positively impact learner performance and engagement. Rivera and Mangindra (2025) demonstrated that differentiated online instruction in Filipino classes significantly improved academic outcomes and learner motivation at the senior high school level. Similarly, Pinaranda and Sario (2024) revealed that Grade 9 learners exposed to DI strategies outperformed their peers in conventional classrooms, highlighting the method's effectiveness in addressing diverse learning needs. In STEM education, Insorio, Alambra, and Dizon (2023) found that the integration of DI strategies such as profiling, choice tasks, and flexible grouping not only enhanced academic achievement but also developed key 21st-century competencies such as problem-solving, collaboration, and adaptability among learners.

These findings point to the necessity of reexamining classroom practices and empowering teachers with approaches that align with the demands of 21st-century education. Differentiated instruction, when effectively implemented, can transform classrooms into inclusive and dynamic spaces that foster holistic development. Yet, to maximize its impact, there is a need to explore how DI specifically contributes to the development of 21st-century skills among senior high school learners in the Philippine setting. This study, therefore, seeks to investigate the role of differentiated instruction as a pedagogical approach for fostering 21st-century competencies, offering practical insights that can inform both classroom practice and professional development efforts.

### ***Conceptual Framework***

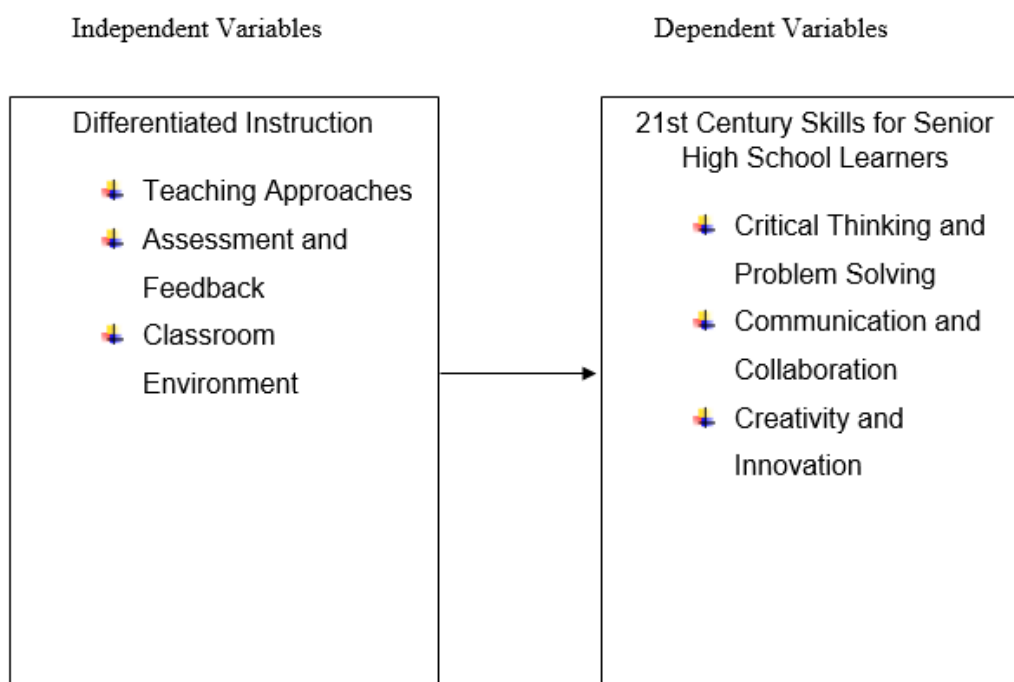
The conceptual framework of this study is anchored by Tomlinson's Theory of Differentiated Instruction (2001) and the 21st Century Skills Framework developed by the Partnership for 21st Century Learning (P21, 2009). Tomlinson emphasized that differentiated instruction is grounded in the belief that learners vary in readiness, interests, and learning profiles, and that effective teaching must be responsive to these differences through varied content, process, product, and learning environments. This theory highlights the importance of flexible pedagogy that promotes equity and inclusivity. On the other hand, the P21 framework posits that modern learners must be equipped with a range of interdisciplinary skills such as critical thinking, creativity, communication, and collaboration to succeed in an increasingly complex, globalized, and technology-driven society. This supports the notion that instructional strategies must evolve to foster holistic, future-ready learners.

The premise of this study is that the effective implementation of differentiated instruction in senior high school classrooms can significantly enhance learners' acquisition of 21st-century skills. In the Philippine context, particularly within the K to 12 Basic Education Curriculum, there remains a persistent challenge in bridging the gap between prescribed learning competencies and the actual development of essential life skills among learners. Many classrooms still rely heavily on one-size-fits-all approaches, which often fail to accommodate the diverse learning needs, styles, and aspirations of senior high school learners. This situation results in disengagement, superficial understanding, and inadequate preparation for higher education, employment, or entrepreneurship.

Differentiated instruction serves as a strategic response to these challenges by allowing teachers to adapt their teaching methods and assessments to address learner variability. Through varied instructional techniques, such as tiered tasks, flexible grouping, learning stations, and choice boards, educators can promote meaningful learning experiences that are learner-centered and skill-enabling. When aligned with 21st-century skill development, these strategies not only improve academic outcomes but also nurture higher-order thinking, innovation, and real-world problem-solving capacities. As stressed by Filipino educators like Dizon and Malabanan (2023) and Cruz (2024), the deliberate integration of differentiation into classroom practice can bridge gaps in learner achievement while equipping learners with the tools necessary for lifelong success.

Moreover, the Philippine Professional Standards for Teachers (DepEd, 2017) underscores the importance of learner-centered teaching, responsiveness to individual needs, and the development of functional literacy and life skills. These align with both Tomlinson's and P21's frameworks, reinforcing the importance of differentiated instruction in achieving national education goals. Therefore, this study is guided by the assumption that differentiated instruction, when implemented consistently and thoughtfully, can foster the core 21st-century skills essential for senior high school learners' personal and professional growth.

As shown in the schematic diagram, the independent variable on the left side contains the senior high school learners in differentiated instruction as a pedagogical strategy in terms of teaching approaches, assessment and feedback, and classroom environment. On the right side of the diagram are the senior high school learners in enhancing their 21st century skills in terms of critical thinking and problem solving, communication and collaboration, and creativity and innovation.



*Figure 1. A schematic diagram showing the relationships of variables.*

### ***Statement of the Problem***

This study aimed to assess differentiated instruction as a pedagogical strategy in enhancing the 21st-century skills of senior high school learners in the Division of Bukidnon, in Kitubo National High School, Kitaotao III District, Division of Bukidnon, during the school year 2025-2026.

Specifically, it sought to answer the following questions:

1. What is the level of differentiated instruction implemented in senior high school in terms of teaching approaches, assessment and feedback, and classroom environment?
2. What is the level of 21st-century skills of senior high school in terms of critical thinking and problem solving, communication and collaboration, and creativity and innovation?
3. *Is there a significant relationship between the senior high school learners in differentiated instruction and their 21st-century skills?*

### ***Significance of the Study***

This study aimed to explore how differentiated instruction as a pedagogical strategy contributed to the enhancement of 21st-century skills among senior high school learners. It held relevance for various stakeholders in the field of education:

To the Learners. This study was highly significant for senior high school learners as it sought to promote learner-centered instruction tailored to their readiness levels, learning profiles,

and interests. Through differentiated instruction, learners were provided with more meaningful and engaging learning experiences that developed their critical thinking, creativity, collaboration, and communication skills, key competencies in the 21st century. The findings supported the need to foster more inclusive, motivating, and personalized learning environments that valued diversity and promoted lifelong learning habits.

To the Teachers. For teachers, this study offered valuable insights into the practical application of differentiated instruction in a diverse classroom setting. It highlighted how strategic instructional modifications could address individual learner needs while still maintaining academic rigor and content alignment. The study also informed teachers about best practices in designing varied tasks, flexible grouping, and formative assessment strategies that enhanced learners' acquisition of 21st-century skills. Ultimately, it served as a reflective tool for educators to improve instructional delivery and learner engagement.

To the School Administrators. School leaders and administrators benefited from the study as it underscored the importance of supporting differentiated instruction through policies, training programs, and instructional supervision. By recognizing the role of instructional flexibility in cultivating 21st-century competencies, administrators were better able to guide curriculum implementation, professional development, and resource allocation. The study helped them design school-wide initiatives that promoted innovation in teaching and inclusive educational practices.

To the Future Researchers. This study served as a foundational reference for future researchers who wished to explore differentiated instruction in relation to other variables such as learner performance, teacher efficacy, or digital integration in instruction. It opened opportunities for replication in different educational contexts and grade levels. Moreover, the findings inspired further research on how differentiated strategies could be refined and sustained to meet the evolving demands of the 21st-century learning landscape.

### ***Delimitation of the Study***

This study focused on the implementation and impact of differentiated instruction as a pedagogical strategy in enhancing the 21st-century skills of senior high school learners. It specifically covered Kitubo National High School, located in Kitaotao III District, Division of Bukidnon, during the school year 2025–2026. The study aimed to examine how differentiated instructional strategies influenced learners' development in critical thinking, communication, collaboration, and creativity. Only senior high school learners across all tracks offered in the school were included to ensure a manageable and focused scope. The

findings were intended to inform instructional practices aligned with 21st-century educational goals.

The research examined the application of differentiated instruction in terms of content, process, product, and learning environment. It evaluated how such differentiation accommodated learners' readiness, interests, and learning profiles to foster the targeted 21st-century skills. The study gave particular attention to observable learner outputs, performance tasks, and teacher-designed classroom strategies. Classroom observations, learner reflections, and teacher interviews served as the primary sources of data, while other instructional methods not aligned with differentiated instruction were excluded from the investigation.

The study was limited to public school learners enrolled in senior high school at Kitubo National High School; learners from private institutions or other grade levels were not included. Teachers participating in the study were required to have at least one year of senior high school teaching experience to ensure familiarity with learner needs. Furthermore, the study focused only on four core 21st-century skills: communication, collaboration, critical thinking, and creativity, excluding other competencies such as information literacy, media literacy, and technology skills. The research also delimited itself from assessing the effectiveness of the school's overall curriculum, concentrating solely on differentiated instructional strategies and their influence on skill development. External factors such as school leadership, teacher workload, parental support, and out-of-school learning environments were acknowledged as potential influences but were not directly assessed or controlled.

### ***Review of the Literature***

#### ***Enhancing 21st Century Skills for Senior High School Learners***

Aguilaro (2023) examined the correlation between problem-solving and critical thinking skills in senior high school mathematics across Iloilo Province. Specifically, findings indicate a statistically significant relationship between higher-order thinking and creativity, suggesting that enhancing one skill supports the growth of the other. Moreover, the study recommends embedding open-ended, real-world math tasks within lessons to strengthen both dimensions. In addition, learners exposed to such tasks demonstrated improved self-direction and innovation over time. Consequently, Aguilaro emphasizes the value of contextualized problem-based approaches in mathematics instruction.

Similarly, Fabillan et al. (2024) assessed the overall level of 21st-century skills among graduates from Victoria Senior High School, examining public and private settings.

Specifically, results showed public school graduates reported “outstanding” proficiency in digital literacy, innovation, communication, and life career readiness. Moreover, private school graduates rated their skills as “very good,” highlighting disparities tied to school resources. In addition, the study advocates differentiated curricular enhancements to sustain and equalize skill development across school sectors. Therefore, Fabillan and colleagues suggest curriculum revisions to further strengthen weaker skill areas.

Furthermore, Cerdeña et al. (2024) explored gamified MOOCs at the University of the Philippines Open University, noting increases in learner motivation and persistence. Specifically, badges, leaderboards, and progress bars enhanced communication and innovation as learners navigated digital environments. Moreover, participants reported heightened collaboration through forum discussions spurred by gamified incentives. In addition, the research supports gamification as a viable strategy to nurture 21st-century competencies like self-direction and creativity. Consequently, Cerdeña et al. call for scaling such techniques to SHS blended learning contexts.

### ***Critical Thinking and Problem Solving***

Hernandez (2021) found that Filipino senior high school learners show strong problem-solving and analytical skills when provided with opportunities for inquiry-based and reflective learning. Specifically, the study emphasized that fostering questioning and reasoning habits enhances learner engagement and conceptual understanding. Moreover, it highlighted that integrating real-world problem scenarios encourages the application of critical thinking skills. In addition, structured support from teachers strengthens learner confidence in decision-making. Therefore, the high level of critical thinking and problem-solving competencies observed aligns with practices that promote active cognitive engagement.

Similarly, Gutierrez (2022) reported that encouraging learner questioning significantly improves comprehension, analytical thinking, and problem-solving abilities in Philippine secondary schools. Specifically, it emphasized that learners who actively seek clarification develop higher cognitive engagement and critical reasoning. Moreover, the research noted that structured opportunities for inquiry foster independence and metacognitive awareness. In addition, it highlighted that learners who question effectively are more confident in expressing ideas. Thus, promoting questioning as a routine practice enhances both understanding and critical thinking capacities.

### ***Communication and Collaboration***

Ramirez (2021) emphasized that structured collaborative classroom activities enhance interpersonal skills and learner participation. Specifically, the study highlighted that mutual respect and active listening contribute to effective communication and engagement. Moreover, it noted that teamwork-oriented tasks strengthen accountability and collective problem-solving. In addition, providing learners with opportunities to express ideas and respond to peers improves interaction quality. Therefore, fostering communication and collaboration is essential for holistic development in senior high school learners.

Similarly, Torres (2022) found that recognizing differing perspectives enhances empathy and engagement in Filipino classrooms. Specifically, the study emphasized that respectful dialogue reduces conflict and fosters cohesion among learners. Moreover, learners who value diverse opinions participate more actively in discussions. In addition, structured activities promoting perspective-taking improve analytical and social reasoning. Consequently, teaching respect in classroom interactions reinforces both communication and collaboration.

Furthermore, Dela Cruz and colleagues (2025) reported that inclusive dialogue and culturally responsive pedagogy enhance intercultural competence and mutual respect in Philippine classrooms. Specifically, their study emphasized that structured, culturally grounded dialogue enables learners to exchange diverse perspectives and navigate classroom diversity more effectively, fostering empathy and mutual understanding. Moreover, it explained that intentional communicative activities, such as reflective discussions and narrative exchanges, help students appreciate varied cultural experiences and viewpoints. In addition, the research found that promoting inclusive dialogue reduces interpersonal conflict and strengthens social cohesion among learners from diverse backgrounds.

### ***Creativity and Innovation***

Santos (2022) emphasized that Filipino learners demonstrate higher engagement and problem-solving effectiveness when given opportunities to apply creative approaches in classroom tasks. Specifically, the study highlighted that structured activities encouraging originality enhance learners' adaptability and critical thinking. Moreover, it noted that connecting learning to real-life contexts increases motivation and meaningful application. In addition, providing learners with opportunities to reflect on feedback strengthens their creative capacities. Therefore, fostering creativity and innovation is critical for developing 21st-century competencies among senior high school learners.

Similarly, Reyes (2021) reported that learners who perceive the real-life relevance of lessons exhibit higher engagement, motivation, and application of knowledge. Specifically, the study emphasized that contextualizing learning enhances problem-solving skills and encourages innovative thinking. Moreover, learners become more proactive when lessons have tangible applications. In addition, linking learning to real-life situations fosters critical thinking and adaptability. Hence, promoting real-world connections in classroom tasks strengthens creative and innovative capacities.

Furthermore, Villanueva (2022) found that Filipino learners develop stronger creativity when encouraged to experiment with strategies and generate innovative solutions. Specifically, active exploration enhances flexibility, engagement, and independent thinking. Moreover, learners who take calculated risks in problem-solving demonstrate higher confidence in applying creative ideas. In addition, experimentation fosters adaptability across diverse learning tasks. Thus, encouraging alternative approaches and creative problem-solving strengthens overall innovation competencies.

### **Research Methodology**

The investigation employed a descriptive-correlational research design, and data were analyzed quantitatively. The descriptive method was used to examine the level of differentiated instruction implemented among senior high school learners, specifically in terms of teaching approaches, assessment and feedback, and classroom environment. It also described learners' development in 21st-century skills, including critical thinking and problem-solving, communication and collaboration, and creativity and innovation. Additionally, the study analyzed the significant relationship between the implementation of differentiated instruction and the learners' 21st-century skills. This approach allowed the research to provide both a detailed description of current practices and a statistical examination of the associations between instructional strategies and skill development.

### **Locale of the Study**

This study was conducted at Kitubo National High School, a public secondary school located in Kitaotao III District, Division of Bukidnon, Region X. Bukidnon, a landlocked province in Northern Mindanao, is recognized for its diverse culture, agricultural economy, and commitment to educational development. The municipality of Kitaotao, where the school is situated, is characterized by rural communities with learners coming from various indigenous and farming backgrounds. Kitubo National High School, therefore, serves as an accessible

educational institution for learners from upland and remote barangays. Its senior high school department offers the General Academic Strand (GAS), Technical-Vocational-Livelihood (TVL), and other specialized tracks depending on the availability of resources and teaching personnel.

The school catered to a growing population of senior high school learners who exhibited diverse learning needs, socio-cultural backgrounds, and levels of academic readiness. Despite its geographically isolated location, which limited access to instructional materials, technological resources, and professional development opportunities for teachers, the teaching staff remained committed to employing innovative and context-based pedagogical practices. This made the school a relevant and authentic setting to investigate how differentiated instruction could enhance learners' 21st-century skills in a real-world classroom context. The school's environment reflected a microcosm of many rural public senior high schools in the Philippines, providing valuable insights into typical challenges and strategies in such settings.

Kitubo National High School was purposively selected as the study's locale because it represented the realities of multi-level, mixed-ability learners requiring differentiated instruction. Learners came from various barangays, often commuting long distances to attend classes, which contributed to differences in academic performance, motivation, and access to learning support. The teaching staff had gradually adopted learner-centered approaches, aligning with the objectives of the study. During the School Year 2025–2026, the school implemented the K to 12 curriculum under the Revised K-12 Curriculum of the Department of Education, with senior high school teachers employing strategies that promoted engagement and the development of critical thinking, communication, collaboration, and creativity. The school leadership supported professional development and instructional innovations, creating an enabling environment for differentiated instruction. Focusing on Kitubo National High School allowed the study to generate findings grounded in the experiences of learners and teachers in a typical rural public school, providing implications for teaching practices, policy decisions, and future research on localized strategies for enhancing 21st-century skills.

## **Findings**

Learners perceive differentiated instruction as highly implemented in teaching approaches, assessment and feedback, and classroom environment. Teachers explain lessons in multiple ways, provide examples, and encourage participation, fostering understanding and

engagement. Assessment practices are varied and constructive, though reflective tasks and opportunities for revisions are less emphasized. Classroom environments are inclusive and supportive, promoting collaboration and respect, yet recognition of learner achievements is inconsistent. Overall, differentiated instruction is effectively applied, with room for enhancing scaffolding, reflection, and motivational practices.

Learners demonstrate high proficiency in critical thinking, problem-solving, communication, collaboration, creativity, and innovation. They actively analyze information, ask questions, and collaborate with peers, showing strong engagement in essential skills. However, giving feedback, reflecting on learning, and taking risks in creative tasks are relatively less practiced. This suggests learners are developing competencies but need more structured opportunities to strengthen reflective and innovative practices. Overall, learners are proficient yet can achieve higher mastery with targeted skill-building interventions.

Differentiated instruction is strongly and positively associated with the development of 21st-century skills. Teaching approaches, assessment practices, and classroom environment collectively contribute to learners' critical thinking, collaboration, and creativity. The findings confirm that learner-centered, adaptive, and supportive instruction significantly enhances skill acquisition. This underscores the importance of sustaining differentiated instruction to foster holistic learner development.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on the findings of the study, the following conclusions were drawn:

Differentiated instruction is implemented at a high level in senior high school classrooms. Teachers use varied teaching approaches, provide examples, and maintain supportive environments that foster engagement. However, scaffolding, reflective assessments, and recognition of learner achievements need further enhancement. Improving these areas can make learning more personalized and equitable for all learners.

Senior high school learners demonstrate strong 21st-century skills, including critical thinking, collaboration, and creativity. Yet, opportunities to apply feedback, reflect on learning, and take risks in creative tasks are limited. This suggests learners can further strengthen their competencies with structured, skill-focused activities. Deliberate instructional strategies are necessary to develop deeper reflective and innovative capacities.

Differentiated instruction significantly contributes to the development of learners' 21st-century skills. Adaptive teaching, diverse assessments, and supportive classroom climates collectively enhance critical thinking, collaboration, and creativity. Sustaining and refining

these instructional practices is essential to prepare learners for future academic and professional demands. Systematic monitoring and professional support are key to maintaining these positive outcomes.

Based on the findings and conclusions, the following are recommended:

Teachers may enhance differentiated instruction by using scaffolding, varied methods, and multiple learning pathways to address diverse learner needs. Professional development workshops on adaptive lesson planning can strengthen teacher effectiveness. Structured strategies can ensure equitable learning opportunities and higher engagement.

Teachers may provide structured activities to develop learners' 21st-century skills, including reflection, problem-solving, collaboration, and creativity. Integrating project-based learning, inquiry tasks, and reflective exercises can deepen skill mastery. Opportunities to take creative risks and apply feedback should be consistently included. School administrators may monitor and support the implementation of differentiated instruction through classroom observations, learner feedback, and performance assessments. Ongoing mentoring and professional support can sustain skill development. Systematic evaluation ensures that teaching practices continue to foster critical thinking, collaboration, and innovation effectively.

The researcher strongly recommends that another study be conducted using other variables and increase the number of respondents and larger in scope to determine whether the results are still different.

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