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Differentiated Learning Instruction Practices and Learners' 21st Century Skills

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Abstract

In today's rapidly evolving world, equipping learners with 21st century skills is crucial for preparing them to meet the demands of modern society. The study was conducted to determine the level of teachers' differentiated learning instruction practices and learners' 21st century skills in Kalilangan East Ditrict, Division of Bukidnon for the School Year 2024-2025. Specifically, it sought to describe the profile of the teachers and learner-respondents; assess the level of teachers' differentiated learning instruction practices; examine the level of learners' 21st century skills; determine the significant relationship between the teachers' differentiated learning instruction practices and learners' 21st century skills; and test the significant difference in the teachers' differentiated learning instruction practices and learners' 21st century skills when grouped according to their profile. It involved one hundred five (105) public elementary school teachers and two hundred ten (210) learners from Grades 4 to 6 of the aforesaid division employing Correlational method of research. A universal sampling procedure was employed with patterned and modified questionnaires from Bahian and Ubayubay (2024) study. Descriptive and inferential statistical methods, including Pearson's Product-Moment Correlation Coefficient, ANOVA and t-test were applied to analyze the data and identify significant differences.

The findings revealed that most respondents were Teacher I and mostly held Bachelor's Degrees, and majority of learners came from stable home environments with married parents. Differentiated learning instruction practices, especially in content and process, was generally seen as effective, challenges remained in creating an optimal learning environment. Learners displayed strong confidence in communication and collaboration but had room for growth in critical thinking and problem solving. A significant negative relationship between the Learning Environment and students' 21st century skills was identified, indicating the need for improvements in classroom settings. While no overall significant differences were observed in learners' skills based on profiles, creative thinking and communication skills showed significant variations related to gender and parents' civil status. In conclusion, the study emphasizes the importance of experienced teachers in implementing differentiated learning strategies, particularly in Content and Process, while highlighting the need to improve the Learning Environment. It is recommended that school administrators and teachers should collaborate in enhancing classroom settings, and fostering critical thinking and problem-solving skills.

Keywords: Differentiated learning instruction, 21st century skills

1.Introduction

In today's fast-changing world, 21st century skills are essential to prepare learners for future challenges, yet assessments such as the 2024 National Achievement Test reveal low proficiency in problem-solving, information literacy, and critical thinking, exposing gaps in the education system. While the K to 12 Curriculum promotes learner-centered approaches, many classrooms still rely on rote methods that limit

higher-order thinking and collaboration. To address diverse learner needs and ensure no child is left behind, differentiated instruction has emerged as an effective strategy by tailoring content, process, and product to students' readiness, profiles, and interests, thereby fostering the development of 21st century skills and improving learning outcomes.

Research Questions

This study aimed to determine the level of teachers' differentiated learning instruction practices and learners' 21st century skills in Kalilangan East District, Division of Bukidnon for the School Year 2024-2025.

Specifically, it sought to answer the following questions:

1. What is the profile of the teachers in terms of position, grade level advisorship, teaching experience, and highest educational attainment and the profile of the learners in terms of sex and parents' civil status?
2. How do the teachers assess differentiated learning instruction practices based on content, process, product, and learning environment?
3. What is the learners' level of 21st century skills considering communication and collaboration, questioning, creative thinking, and critical thinking and problem solving?
4. Is there a significant relationship between the teachers' assessment of differentiated learning instruction practices and the learners' 21st century skills?
5. Is there a significant difference in the teachers' assessment of differentiated learning instruction practices and learners' 21st century skills when grouped according to their profile?

Significance

This study on differentiated learning instruction practices and learners' 21st century skills in Kalilangan East District, Division of Bukidnon for the School Year 2024-2025 will benefit multiple stakeholders. At the national level, DepEd can refine policies, enhance curriculum implementation, and promote teaching practices that foster essential skills. Division and District Supervisors may use the findings to guide policy formulation and program development, while teacher education programs can prepare future educators with effective strategies. School heads will gain insights for designing professional development and improving instructional supervision, and teachers can assess and refine their practices to strengthen critical thinking, problem-solving, creativity, questioning, communication, and collaboration. Learners, in turn, will benefit from personalized instruction that improves performance and prepares them for future challenges, while future researchers may use the results as a reference for further studies on differentiated instruction and education improvement.

Scope and Limitations

This study explored teachers' differentiated instruction practices and learners' 21st century skills in Kalilangan East District, Division of Bukidnon for School Year 2024-2025, focusing on 105 teachers and 210 Grade 4–6 learners in public elementary schools. It examined teachers' practices in content, process, product, and learning environment, and assessed learners' communication and collaboration, questioning, creative thinking, and critical thinking/problem-solving skills. The study was limited to Grades 4–6 and confined to the specified domains, thus findings may not be generalizable to other grade levels, districts, or factors beyond those considered.

2. Literature Review

Teacher's Profile

Studies show that teacher-related factors significantly influence the implementation of Differentiated Instruction (DI). Moosa and Shareefa (2019) found that teachers' experience and qualifications did not directly determine their knowledge or use of DI, suggesting that other factors such as training and support play a stronger role. In the Philippine context, Fernandez and Tangalin (2020) revealed that students taught through DI outperformed those under traditional methods, highlighting its effectiveness in improving learning outcomes. Similarly, Pacia (2019) emphasized that grade level advisorship affects teachers' ability to apply DI, as different curriculum demands shape instructional competence. Overall, these studies underscore that while teacher profile variables like position, grade level, and experience influence DI practices, continuous professional development and systemic support are crucial for its effective implementation.

Learner's Profile

Studies on learners' demographics and 21st century skills reveal mixed findings. Bual (2024) reported that senior high school students generally practiced 21st century skills to a great extent, with no significant relationship between sex or parents' highest educational attainment and their skills, suggesting that school programs effectively support learners regardless of background. In contrast, Rogayan Jr. et al. (2022) found that female junior high school students demonstrated higher skills, particularly in learning and innovation, highlighting the need for gender-responsive approaches. Similarly, Gallego (2022) noted that students from solo-parent families face unique challenges that may influence their 21st century skills, underscoring the importance of targeted support for these learners.

Differentiated Instruction

Differentiated Instruction (DI) addresses learners' diverse needs in content, process, product, and environment, based on their readiness, interests, and learning profiles. Alsubaie (2020) emphasized its role in fostering critical thinking, creativity, collaboration, and digital literacy, while Walker and Sleegers (2022) highlighted its importance in preparing learners for the demands of the modern world. Studies further suggest that when teachers integrate technology and provide flexible learning environments, DI enhances engagement, motivation, and overall achievement.

Learner's 21st Century Skills

Developing 21st century skills is vital for learners to thrive in a rapidly changing world, as these competencies foster adaptability, innovation, and lifelong learning. Ozturk (2023) emphasized their role in preparing students to be future-ready, while Nguyen and Le (2021) highlighted how communication, collaboration, and digital tools enhance interaction and teamwork. Similarly, Tan and Majid (2023) stressed that creativity, critical thinking, and problem-solving flourish when learners engage in authentic, open-ended tasks, supported by teachers' adaptability and real-world integration.

Methodology

Research Design

This study employed a descriptive-correlational design, which, as Shuttleworth (2014) noted, examines associations among variables in their natural state without manipulation, making it suitable for analyzing

relationships between differentiated instruction practices and learners' 21st century skills. Supported by Fernandez (2014), correlational research effectively measures connections between multiple factors in real-world contexts. Data were collected through a survey questionnaire and analyzed using descriptive and inferential statistics, including Pearson's correlation, ANOVA, and t-test, to determine significant differences.

Participants

The participants of this study were one hundred five (105) public elementary school teachers and two hundred ten (210) learners from Key Stage 2 level from Grades 4 to 6 in Kalilangan East District, Division of Bukidnon, for the School Year 2024-2025. These participants provided comprehensive insights into the assessment of differentiated instruction and the development of 21st century skills among learners in Key Stage 2. The selection of respondents across multiple grade levels ensured a balanced perspective on teaching practices and student outcomes.

Data Collection

The researcher used a survey questionnaire with three parts: respondents' profiles (teachers' position, grade level, experience, and educational attainment; learners' sex and parents' civil status), teachers' differentiated instruction practices based on Tomlinson's model and Yadav (2019), and learners' 21st century skills communication and collaboration, questioning, creative thinking, and critical thinking and problem-solving adapted from Bahian and Ubayubay (2024) for Grades 4–6. A Likert scale measured the frequency and effectiveness of practices and skills development.

Data Analysis

The researcher employed a universal sampling procedure for the teacher-respondents, including all Grade 4 to Grade 6 teachers in the population to ensure comprehensive representation of differentiated instruction practices. For the learner-respondents, two (2) students were selected to represent each teacher. A simple random sampling method was used to choose the learner-respondents, ensuring that each student has an equal chance of being selected. To maintain impartiality, the lottery method was applied, where names drawn randomly, guaranteeing an unbiased selection process. This approach will enhance the study's validity by minimizing sampling bias.

3. Results and Discussions

Problem 1. What is the profile of the teachers in terms of position, grade level advisorship, teaching experience, and highest educational attainment and the profile of the learners in terms of sex and parents' civil status?

Table 1

Category	Frequency	Percent
Master Teacher II	1	0.95
Master Teacher I	7	6.67

Distribution of of Position	Teacher III	14	13.33	**Teachers in terms**
	Teacher II	24	22.86	
	Teacher I	59	56.19	
	Total	**105**	**100.00**	

Table 1 shows that out of 105 teacher-respondents, most (56.19%) hold the Teacher I position, reflecting their entry-level status as early-career teachers still working toward higher qualifications. With adequate training and support, these teachers can effectively implement differentiated instruction, often trying new strategies that enhance learners' 21st-century skills. On the other hand, the least represented group is Master Teacher II, with only one respondent (0.95%), since these roles require advanced expertise, leadership, and mentoring, making them less common. While Master Teachers play a vital role in supervising, coaching, and guiding colleagues, their limited number in the study indicates that higher-level contributions to differentiated instruction may have been underrepresented, emphasizing the importance of ongoing professional development to strengthen practices across all teaching positions.

Table 2
Distribution of Teachers in terms of Grade Level Advisorship

Category	Frequency	Percent
Grade VI	37	35.24
Grade V	33	31.43
Grade IV	35	33.33
Total	**105**	**100.00**

Table 2 shows that most teacher-respondents, 37 (35.24%), are advisers of Grade VI, highlighting the significant role of teachers in this level as they prepare students for the transition to high school, address higher academic and social demands, and focus on standardized assessments that shape learners' readiness for secondary education. The lowest frequency is from Grade V, with 33 (31.43%) advisers, suggesting that responsibilities in this level may be less demanding since teachers primarily reinforce foundational skills rather than advanced competencies. These findings emphasize that grade level advisorship influences the complexity of instructional strategies employed, with upper-grade teachers often tasked with implementing more advanced methods to meet students' developmental needs.

Table 3
Distribution of Teachers in terms of Teaching Experience

Category	Frequency	Percent
21 – 30 years	16	15.24
10 – 20 years	19	18.10
6 – 10 years	46	43.81
5 years and below	24	22.86
Total	**105**	**100.00**

Table 3 shows that most teacher-respondents, 46 (43.81%), have 6–10 years of teaching experience, suggesting that many remain in entry-level positions despite several years in service, indicating slower promotion or limited advancement opportunities that may influence motivation, confidence, and willingness to adopt innovative strategies such as differentiated instruction and 21st-century skills integration. The least represented group are those with 21–30 years of experience, 16 (15.24%), likely due to retirement, movement into administrative roles, or preference for established teaching methods that may not align with progressive approaches. This highlights the need to balance the perspectives of both mid-career and veteran teachers while ensuring continuous professional development to encourage the adoption of modern instructional practices across all experience levels.

Table 4
Distribution of Teachers in terms of Highest Educational Attainment

Category	Frequency	Percent
PhD / EdD Holder	7	6.67
With PhD / EdD Units	4	3.81
Master's Degree Holder	24	22.86
With Master's Degree Units	22	20.95
Bachelor's Degree	48	45.71
Total	**105**	**100.00**

Table 4 shows that most teacher-respondents, 48 (45.71%), hold a Bachelor's Degree, reflecting that many are still early in their careers and remain at entry-level qualifications required for teaching, which may also limit their chances for promotion despite years of service. In contrast, only 4 (3.81%) respondents have PhD/EdD units, indicating that few pursue advanced studies due to the time, cost, and commitment required. Taken with the data from previous tables, this pattern reveals that many teachers remain in Teacher I positions with mid-level experience and limited qualifications, suggesting that educational attainment is a barrier to career progression. Moreover, higher educational levels do not necessarily guarantee the effective implementation of differentiated instruction, as factors such as professional development, institutional support, and teacher efficacy play a more crucial role in improving instructional practices and student outcomes.

Table 5
Distribution of Learners' Profile in terms of Sex

Category	Frequency	Percent
Male	85	40.48
Female	125	59.52
Total	**210**	**100.00**

Table 5 shows that out of 210 learner-respondents, most are females with 125 (59.52%), while males make up 85 (40.48%). This indicates that female learners dominate the sample, reflecting common trends in education where females often have higher enrollment and participation rates, which may influence the results to lean toward their needs and learning styles. The smaller male representation suggests possible

barriers affecting their attendance and engagement, which could have limited the balance of perspectives in the findings. This gender gap emphasizes the need to consider sex as a factor when analyzing differentiated instruction and designing strategies to ensure both male and female learners are equally supported in developing 21st-century skills.

Table 6
Distribution of Learners' Parents' Civil Status

Category	Frequency	Percent
Solo Parent	26	12.38
Married	172	81.90
Widow/ Widower	12	5.71
Total	**210**	**100.00**

Table 6 shows that most learner-respondents, 172 (81.90%), have married parents, suggesting that many come from stable households where financial and emotional support may positively influence academic performance and the development of 21st-century skills. The presence of both parents often provides learners with greater access to resources, guidance, and encouragement, fostering stronger engagement in studies and extracurricular activities. In contrast, the least represented are learners with widowed parents, only 12 (5.71%), reflecting the challenges single-parent households may face such as limited resources, added responsibilities, and emotional strain, which can affect children's learning experiences and skill development. This highlights the importance of parental involvement in shaping learners' growth while also underscoring the need for additional support mechanisms for those from single-parent families to ensure equal opportunities for academic and personal success.

Problem 2. How do the teachers assess differentiated learning instruction practices based on content, process, product, and learning environment?

Table 7
Summary of Teachers' Assessment on Differentiated Learning Instruction Practices

Variable	Mean	SD	Interpretation
Content	3.79	0.40	Very High
Process	3.79	0.41	Very High
Product	3.77	0.43	Very High
Learning Envrionment	3.74	0.44	Very High
Overall	**3.77**	**0.42**	**Very High**

Table 7 shows that teachers' assessment of differentiated learning instruction practices yielded an overall mean of 3.77 (SD = 0.42), interpreted as Very High, indicating strong recognition of its role in improving teaching, boosting learner motivation, and equipping students with 21st-century skills. The highest-rated variables were Content and Process, both with a mean of 3.79, suggesting that teachers highly value

aligning lessons with students' readiness, interests, and learning profiles, as well as making instruction flexible through varied pacing, grouping, and activities that foster creativity, collaboration, problem-solving, and independence. The lowest-rated variable was Learning Environment with a mean of 3.74, still interpreted as Very High, implying that while teachers acknowledged its importance, limitations such as overcrowded classrooms, insufficient resources, and space constraints affected its full implementation. These findings highlight that differentiated instruction is widely practiced and valued, but improving classroom environments and providing continuous professional support could further enhance its effectiveness in fostering inclusive and dynamic learning experiences.

Problem 3. What is the learners' level of 21st century skills considering communication and collaboration, questioning, creative thinking, and critical thinking and problem solving?

Table 8
Summary of the Learners' Level of 21st Century Skills

Variables	Mean	SD	Interpretation
Communication and Collaboration	3.80	0.39	Very High
Questioning	3.78	0.42	Very High
Creative Thinking	3.77	0.43	Very High
Critical Thinking and Problem Solving	3.73	0.44	Very High
Overall	**3.77**	**0.42**	**Very High**

Table 8 shows that learners' 21st-century skills reached an overall mean of 3.77 (SD = 0.42), interpreted as Very High, indicating that students possessed the essential competencies needed to thrive in modern academic and professional settings. The highest-rated domain was Communication and Collaboration with a mean of 3.80, suggesting that learners were highly engaged in group activities, valued effective interaction, and were well-prepared for teamwork-based environments. The lowest-rated domain was Critical Thinking and Problem Solving with a mean of 3.73, still Very High but slightly lower, implying that while students recognized the importance of analyzing situations and solving complex problems, they felt less confident in applying these skills, pointing to a need for stronger instructional support in this area. Overall, the findings highlight tha learners are effectively developing 21st-century skills, though enhancing strategies that focus on critical thinking and problem-solving could further strengthen their readiness for future challenges.

Problem 4. Is there a significant relationship between the respondents' child protection policy awareness and their practices?

Table 9
Result of the Test on Relationship Between the Teachers' Assessment on Differentiated Learning Instruction Practices and Learners' 21st Century Skills

	21st Century Skills	Overall

Differentiated Learning Instructions	Communication and Collaboration	Questioning	Creative Thinking	Critical Thinking and Problem Solving	
	Person r	**Pearson r**	**Pearson r**	**Pearson r**	
	p-value	**p-value**	**p-value**	**p-value**	
	Interpretation	**Interpretation**	**Interpretation**	**Interpretation**	
Content	0.08	-0.05	0.05	-0.23	-0.07
	0.37	0.60	0.58	0.01	0.46
	NS	NS	NS	**S**	**NS**
Process	-0.03	-0.01	0.10	0.01	0.03
	0.72	0.90	0.29	0.89	0.74
	NS	NS	NS	NS	**NS**
Product	0.14	0.15	0.07	-0.10	0.12
	0.15	0.12	0.44	0.28	0.19
	NS	NS	NS	NS	**NS**
Learning Envrionment	-0.17	-0.16	0.03	-0.12	-0.21
	0.07	0.09	0.73	0.21	0.02
	NS	NS	NS	NS	**S**

Table 9 shows that the relationship between teachers' assessment of differentiated learning instruction practices and learners' 21st-century skills revealed a significant negative correlation for Learning Environment (r = -0.21, p = 0.02), suggesting that classroom conditions such as overcrowding, limited resources, or lack of quiet spaces may have hindered rather than supported skill development. Content also showed a significant negative relationship with Critical Thinking and Problem Solving (r = -0.23, p = 0.01), indicating that instructional design may not have fully encouraged deeper analysis or real-world problem-solving, while other domains of content showed no significant link. Process (r = 0.03, p = 0.74) and Product (r = 0.12, p = 0.19) likewise demonstrated non-significant relationships, suggesting that methods and outputs alone may not have been sufficient to strengthen essential competencies. These results highlight the importance of integrating problem-based learning, collaborative activities, and technology-driven strategies while improving physical and emotional learning environments to foster communication, collaboration, critical thinking, and creativity more effectively.

Problem 5. Is there a significant difference in the teachers' differentiated learning instruction practices and learners' 21st century skills when grouped according to their profile?

Table 10
Difference in the Teachers' Differentiated Learning Instruction Practices when Grouped according to their Profile

Difference		**Differentiated Learning Instruction**			
Profile Variable	**Computed Values**	Content	Process	Product	Learning Environment

Teacher Profile					
Position	F	1.12	0.76	1.24	0.68
	p-value	0.35 NS	0.55 NS	0.29 NS	0.60 NS
Grade Level Advisorship	F	1.81	0.59	0.02	0.19
	p-value	0.168 NS	0.55 NS	0.97 NS	0.82 NS
Teaching Experience	F	0.70	0.30	3.30	1.65
	p-value	0.553 NS	0.82 NS	0.02 NS	0.18 NS
Highest Educational Attainment	F	0.59	1.77	1.03	0.10
	p-value	0.66 NS	0.14 NS	0.39 NS	0.98 NS
Overall	p-value	0.43 **NS**	0.51 **NS**	0.42 **NS**	0.64 **NS**

Table 10 shows that there is no significant difference in teachers' differentiated learning instruction practices when grouped according to position, grade level advisorship, teaching experience, and highest educational attainment, as all p-values exceeded the 0.05 alpha level, leading to the acceptance of the null hypothesis. This indicates that teachers, regardless of their position, grade level handled, years of experience, or educational attainment, applied similar approaches in terms of content, process, product, and learning environment. The findings suggest that these profile variables did not significantly influence differentiated instruction practices, implying that other factors such as professional development, instructional support, and available resources may have had a greater impact. Hence, enhancing teacher training and providing adequate support systems could be more effective in improving differentiated instruction and ensuring quality learning outcomes across all levels.

Table 11
Difference in the Learners' 21st Century Skills when Grouped according to their Profile

Difference		**21st Century Skills**			
Learners Profile	**Computed Values**	Communication and Collaboration	Questioning	Creative Thinking	Critical Thinking and Problem Solving
Sex	T	1.62	2.49	7.87	0.44
	p-value	0.20 NS	0.11 NS	0.005 **S**	0.50 NS
Parents' Civil Status	F	3.25	4.81	0.46	0.56
	p-value	0.04 **S**	0.009 **S**	0.62 NS	0.57 NS
Overall	p-value	0.12 **NS**	0.06 **NS**	0.31 **NS**	0.53 **NS**

Table 11 shows that learners' 21st-century skills did not significantly differ when grouped according to sex and parents' civil status, as most p-values exceeded the 0.05 alpha level, leading to the acceptance of the null hypothesis. For sex, no significant difference was found in communication and collaboration, questioning, and critical thinking and problem-solving, while creative thinking showed a significant difference ($p = 0.005$), suggesting that gender may have influenced creativity due to cultural or instructional factors. For parents' civil status, significant differences were observed in communication and collaboration ($p = 0.04$) and questioning ($p = 0.009$), while critical thinking and problem-solving remained non-significant, implying that family dynamics and parental support may have shaped learners'

engagement in collaborative and questioning activities. These findings highlight the importance of providing equal opportunities to foster creativity across genders and strengthening family involvement regardless of civil status to support the development of key 21st-century skills.

4. Conclusion and Recommendations

Conclusion

This study successfully achieved its objective to determine the level of teachers' differentiated learning instruction practices and learners' 21st century skills in Kalilangan East Ditrict, Division of Bukidnon. The study revealed that most respondents were Teacher I and mostly held Bachelor's Degrees, and majority of learners came from stable home environments with married parents. Furthermore, differentiated learning instruction practices, especially in content and process, was generally seen as effective and learners displayed strong confidence in communication and collaboration. While no overall significant differences were observed in learners' skills based on profiles, creative thinking and communication skills show significant variations related to gender and parents' civil status. Moreover, the study emphasizes the importance of experienced teachers in implementing differentiated learning strategies, particularly in Content and Process, while highlighting the need to improve the Learning Environment.

Recommendations

Based on the findings of the study, it is recommended that school administrators improve the learning environment by providing well-equipped, distraction-free classrooms and offering professional development for teachers to design engaging spaces. Teachers should strengthen students' critical thinking and problem-solving skills through activities that promote higher-order thinking and alternative solutions, while ensuring classroom content is diverse, stimulating, and connected to real-world applications to enhance engagement and 21st-century skills. Lastly, teachers are encouraged to collaborate with parents to address how family dynamics, particularly parents' civil status, may influence communication and collaboration, by creating activities that foster family involvement and provide equal support for all learners.

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