RIPPLE EFFECT: TEACHER'S DIFFERENTIATEDINSTRUCTIONS AND WORKLOAD IMPACT THE 4C'S AND WELL-BEING OF ELEMENTARY TEACHERS

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Abstract

This study examined the influence of teachers' differentiated instruction and workload on the development of the Four Cs (4Cs) learning skills—creativity, collaboration, communication, and critical thinking—and on teachers' well-being. Guided by the Differentiated Instruction Theory, Job Demands–Resources Model, P21 Framework, and PERMA Theory of Well-Being, the study explored the relationships among these variables. A quantitative design was employed using survey questionnaires administered to elementary teachers in the Division of San Pablo City. Data were analyzed through descriptive statistics, Pearson correlation, and mediation analysis. Results showed that teachers demonstrated high levels of differentiated instruction and moderate to high workload. The 4Cs learning skills and teachers' well-being were at satisfactory levels. Differentiated instruction significantly influenced workload, 4Cs learning skills, and well-being. Additionally, workload—particularly ancillary functions—significantly mediated these relationships. The findings suggest that while differentiated instruction supports learning and well-being, excessive workload may hinder its effectiveness, highlighting the need for balanced workload practices.

Keywords: Differentiated Instructions, Teacher's Ancillary Workload, 4Cs Learning Skills, Teachers' Well-being, and Mediation Analysis

Introduction

Teachers play a central role in shaping learners who can thrive in the twenty-first century, particularly in developing the Four Cs Learning Skills (4Cs): creativity, collaboration, communication, and critical thinking (Trilling & Fadel, 2009). Around the world, educational systems are shifting toward learner-centered instruction that promotes higher-order thinking and authentic problem-solving, requiring teachers to design varied learning tasks that address diverse learners' needs (Partnership for 21st Century Skills, 2019). However, such expectations demand ample preparation time, emotional energy, and supportive working conditions that enable teachers to provide meaningful learning experiences.

In the Philippines, public school teachers perform multiple roles beyond classroom instruction. A national study by the Philippine Institute for Development Studies revealed that teachers spend only about one-third of their working hours on actual teaching, while the rest are devoted to paperwork, administrative tasks, and other non-teaching functions (David et al., 2019). The Department of Education (DepEd) has likewise acknowledged persistent challenges, including large class sizes, diverse learner needs, and heavy compliance requirements, which limit preparation time and affect instructional quality (DepEd, 2020). These conditions have been

associated with reduced teaching effectiveness and increased stress among public school teachers.

Heavy teacher workload has consistently been linked to emotional exhaustion, declining motivation, and lower job satisfaction (Ballet & Kelchtermans, 2009; Kyriacou, 2011). The Job Demands–Resources Model explains that when teachers face high demands but lack sufficient time and support, their well-being deteriorates and their teaching performance declines (Bakker & Demerouti, 2014). These patterns emphasize the importance of examining how workload directly influences both teaching practices and teacher well-being.

Alongside these pressures, teachers are expected to implement Differentiated Instruction (DI), an approach in which teachers adjust content, process, product, and learning environment to meet diverse learners' needs (Tomlinson, 2014). Research shows that DI strengthens engagement and learning outcomes (Subban, 2006), yet its successful implementation requires thoughtful planning, preparation time, and sustained teacher creativity—conditions that may be hindered by heavy workload (De Jong et al., 2021). When teachers are overwhelmed by administrative duties, the quality of Differentiated Instruction may weaken, limiting their ability to provide responsive classroom experiences.

The development of the 4Cs in classrooms depends largely on the provisions teachers design. To nurture creativity, collaboration, communication, and critical thinking, teachers must craft performance tasks, collaborative activities, and inquiry-based learning experiences that cultivate these competencies (Trilling & Fadel, 2009). However, meaningful 4C-oriented instruction becomes difficult to sustain when teachers lack preparation time or experience stress that affects their performance. This underscores the importance of teacher well-being, as emotionally healthy teachers are better able to foster effective learning environments (Seligman, 2011).

Although studies have explored workload, Differentiated Instruction, 21st-century skills, and teacher well-being separately, research is still limited in explaining how these variables interact within a single framework in Philippine basic education (David et al., 2019). This gap is particularly relevant for public school teachers who face multiple roles, large classes, and constrained preparation time. By examining these interconnected factors, the present study seeks to generate evidence supporting balanced workloads, protecting teacher well-being, and strengthening 21st-century learning provisions for Filipino learners.

Statement of the Problem

This study, titled “Ripple Effect: Teachers’ Differentiated Instructions and Workload Impact the 4C’s and Well-Being of Elementary Teachers,” aimed to determine how teachers’ teaching-related workload, ancillary workload, and differentiated instruction influenced the development of the 4C’s learning skills among learners and the overall well-being of elementary teachers.

Specifically, it sought to answer the following questions:

1. What is the level of teachers’ differentiated instruction in terms of:
    1.1. content;
    1.2. process;
    1.3. product; and
    1.4. learning environment?

2. What is the level of teachers' workload in terms of:
    2.1. teaching-related tasks; and
    2.2. ancillary functions?
3. What is the level of teachers' provisions for the 4Cs learning skills in terms of:
    3.1. creativity;
    3.2. collaboration;
    3.3. communication; and
    3.4. critical thinking?
4. What is the level of teachers' well-being in terms of:
    4.1. emotional well-being;
    4.2. physical well-being;
    4.3. social well-being; and
    4.4. professional well-being?
5. Do teachers' differentiated instructions significantly affect:
    5.1. teacher's workload in related tasks;
    5.2. teacher's workload in ancillary function;
    5.3 4C's learning skills; and
    5.4. teacher's well-being?
6. Does teacher workload as to teacher-related tasks significantly mediate the relationship between:
    6.1. teacher's differentiated instructions and 4C's learning skills; and
    6.2. Teachers' differentiated instructions and teachers' well-being?
7. Does teacher workload as to ancillary function significantly mediate the relationship between:
    7.1. teacher's differentiated instructions and 4C's learning skills; and
    7.2. Teachers' differentiated instructions and teachers' well-being?

2. Methodology

This study utilized a quantitative descriptive–correlational research design to examine the relationships among teachers' workload, differentiated instruction, teachers' well-being, and the provision of 4Cs learning skills in the classroom. The descriptive aspect of the study enabled the researcher to determine the existing conditions and practices experienced by teachers, while the correlational aspect explored whether significant relationships existed among the identified variables without manipulating the natural school environment. Through this approach, the researcher gathered measurable and objective data regarding how teachers' instructional practices and professional responsibilities influenced both their well-being and their ability to promote creativity, collaboration, communication, and critical thinking among learners. The design also provided a realistic and evidence-based understanding of teachers' experiences and classroom practices within the educational setting.

The respondents of the study consisted of 325 public elementary school teachers from the Division of San Pablo City. These participants were selected because they were directly involved in classroom instruction, carried varying teaching and ancillary workloads, implemented differentiated instruction practices, and facilitated the development of 4Cs learning skills among students. To ensure fair representation across elementary grade levels, stratified random

sampling was employed in selecting the respondents. A researcher-developed questionnaire served as the primary data-gathering instrument and was divided into sections corresponding to the major variables of the study, namely teachers' workload, differentiated instruction, teachers' well-being, and the provision of 4Cs learning skills. The instrument utilized a 5-point Likert Scale and underwent face and content validation by experts, followed by pilot testing to establish its reliability and internal consistency through Cronbach's Alpha.

The data-gathering procedure began with the researcher securing approval from the Schools Division Superintendent of San Pablo City. After the endorsement was granted, coordination with District Supervisors and school heads of participating public elementary schools was conducted to facilitate the implementation of the study. The online survey questionnaire was distributed through Google Forms using official communication platforms such as email, messenger, and group chats. The purpose of the study, instructions for answering the questionnaire, and assurances regarding voluntary participation, confidentiality, and anonymity were clearly presented at the beginning of the form together with an informed consent statement that respondents acknowledged before proceeding. Upon completion of the data collection process, the researcher organized, tallied, and prepared the responses for statistical analysis while ensuring that all gathered information remained confidential and was utilized solely for academic purposes.

Several statistical tools were utilized to analyze and interpret the data gathered in the study. Frequency and percentage distribution were used to describe the respondents' demographic profile according to district, sex, age group, and years of service. Mean and standard deviation were applied to determine the levels of differentiated instruction, workload, 4Cs learning skills, and teachers' well-being based on the responses obtained from the survey questionnaire. In addition, multiple linear regression analysis was employed to identify the significant effects of differentiated instruction on teachers' workload, well-being, and 4Cs learning skills. Mediation analysis was also conducted to determine whether teachers' workload significantly mediated the relationship between differentiated instruction and both teachers' well-being and 4Cs learning skills. Lastly, Cronbach's Alpha was utilized to verify the reliability and consistency of the researcher-developed questionnaire used in the study.

1. Results and Discussion

Part I. Level of Teachers' Differentiated Instruction

Table 1
Perceived Level of Teachers' Differentiated Instruction as to Content

Indicators	Mean	SD	VI
1. Design varied instructional materials that address diverse learner needs.	3.87	0.34	EE
2. Adjust the complexity of texts, topics, and tasks whenever necessary to match students' readiness levels.	3.87	0.34	EE
3. Provide enrichment content that extends learning opportunities for advanced and high-performing learners.	3.84	0.37	EE
4. Modify lesson content to support learners who require remediation	3.87	0.34	EE

Indicators	Mean	SD	VI
or scaffolded instruction.			
5. Contextualize content by connecting lessons to learners' prior knowledge, interests, and lived experiences.	3.87	0.34	EE
Overall	**3.87**	**0.29**	EE

Legend: 1.0-1.80 (slightly effective), 1.81-2.60 (Moderately Effective), 2.61-3.20 (/Very Effective), and 3.21-4.00 Extremely Effective)

Table 1 presents the perceived level of teachers' differentiated instruction as to content among public elementary school teachers. The overall result yielded an extremely effective level (M = 3.87, SD = 0.29), indicating that teachers are generally able to adjust instructional content to accommodate diverse learner needs. The relatively low standard deviation suggests that responses are consistent across respondents, reflecting a shared pattern of practice in similar school settings.

This pattern suggests that content differentiation is not only present but routinely practiced in public elementary classrooms. In many Philippine public schools, teachers handle classes with wide variations in reading ability, ranging from non-readers to more advanced learners. As a result, lessons are often adjusted in real time to ensure that content remains accessible while still meeting curriculum standards set by the Department of Education (Department of Education, 2023).

With respect to designing varied instructional materials (M = 3.87, SD = 0.34), the findings indicate that teachers consistently prepare materials that respond to different learner needs. In practice, this often involves creating teacher-made worksheets, visual aids, and modified learning tasks due to limited access to ready-made or leveled instructional resources. This becomes particularly demanding in classrooms with large class sizes, where teachers may handle 40 or more pupils, requiring multiple versions of the same lesson to address varying levels of understanding.

Similarly, the ability to adjust the complexity of texts, topics, and tasks (M = 3.87, SD = 0.34) reflects teachers' responsiveness to learner readiness. In actual classroom situations, this may involve simplifying reading passages for struggling learners while simultaneously providing more challenging activities for fast learners. These adjustments are typically carried out alongside routine instructional responsibilities and administrative requirements such as lesson documentation, submission of reports, and participation in school-based monitoring activities.

Providing enrichment content for advanced learners (M = 3.84, SD = 0.37), although still rated extremely effective, registered the lowest mean among the indicators. This may suggest that enrichment practices are somewhat constrained by time and workload demands. In many public schools, teachers are also involved in non-teaching assignments such as school programs, meetings, and compliance-related paperwork required by the Department of Education (Department of Education, 2023). As a result, extending learning opportunities for high-performing learners may not always be consistently prioritized, particularly when attention is directed toward ensuring that all pupils meet minimum learning competencies.

The modification of lesson content for remediation or scaffolded instruction (M = 3.87, SD = 0.34) further indicates that teachers actively support learners who require additional assistance. This often includes reteaching lessons, breaking down complex concepts, and providing guided instruction. However, these practices frequently extend beyond regular class

hours, as teachers continue preparing materials and addressing learner gaps even after school time, which may have implications for workload and overall well-being.

In terms of contextualizing content (M = 3.87, SD = 0.34), the findings highlight teachers' efforts to connect lessons to learners' prior knowledge and lived experiences. In public elementary settings, this may involve relating topics to familiar community situations or everyday experiences of pupils to make learning more meaningful. Such practices demonstrate how teachers adapt instruction despite constraints in instructional materials and classroom resources.

Moreover, this approach helps increase learners' engagement and comprehension, as students are more likely to understand concepts when these are anchored in real-life contexts. It also encourages active participation, since learners can relate lessons to their own experiences and perspectives. However, consistently integrating contextualized content may require additional time and creativity from teachers, particularly in classrooms with diverse learner backgrounds.

These findings are supported by existing literature on differentiated instruction. Content differentiation involves adjusting what learners study based on their readiness, interests, and learning profiles (Tomlinson, 2017). Similarly, Heacox (2012) emphasized the importance of providing varied instructional materials to ensure that all learners can access the curriculum. Hall, Strangman, and Meyer (2003) further noted that differentiated instruction enables teachers to address diverse learner needs through flexible content delivery. The present findings align with these perspectives, suggesting that teachers in public elementary schools are able to implement content differentiation practices despite structural and workload-related challenges.

Table 2

Perceived Level of Teachers' Differentiated Instruction as to Process

Indicators	Mean	SD	VI
1. Employ varied instructional strategies that respond to learners' diverse preferences and needs.	3.85	0.36	EE
2. Adjust lesson pacing to accommodate differences in learner progress and mastery.	3.85	0.36	EE
3. Scaffold learning tasks for students who need guided practice or step-by-step assistance.	3.85	0.36	EE
4. Provide independent and advanced tasks to challenge learners who are ready for acceleration.	3.80	0.40	EE
5. Use differentiated questioning to promote higher-order thinking.	3.87	0.33	EE
Overall	**3.85**	**0.29**	**EE**

Legend: 1.0-1.80 (slightly effective), 1.81-2.60 (Moderately Effective), 2.61-3.20 (Very Effective), and 3.21-4.00 Extremely Effective)

Table 2 presents the perceived level of teachers' differentiated instruction as to process among public elementary school teachers. The overall result indicated an extremely effective level (M = 3.85, SD = 0.29), suggesting that teachers consistently employ varied instructional approaches to address learners' diverse needs. The relatively low standard deviation implies that responses are generally consistent, reflecting a common pattern of practice across classrooms.

This finding indicates that process differentiation is actively integrated into daily instruction. In many public elementary school settings, teachers manage classes with diverse

learning preferences, varying levels of mastery, and different rates of comprehension. As such, instructional delivery often requires flexibility in strategies, pacing, and classroom engagement techniques aligned with expectations set by the Department of Education (Department of Education, 2023).

The use of varied instructional strategies (M = 3.85, SD = 0.36) reflects teachers' efforts to accommodate learners' preferences and needs. In practice, this may include a combination of group work, peer-assisted learning, and interactive activities within a single lesson. However, in classes that typically reach 40 or more pupils, implementing multiple strategies simultaneously can be demanding, particularly in maintaining student engagement and classroom management.

Similarly, adjusting lesson pacing (M = 3.85, SD = 0.36) demonstrates teachers' responsiveness to learners' progress. In actual classroom situations, some learners grasp concepts quickly, while others require repeated explanations and additional time. Teachers often navigate this by revisiting lessons for struggling learners while attempting to keep pace with curriculum targets and scheduled competencies, which may create tension between depth of understanding and time constraints.

The practice of scaffolding learning tasks (M = 3.85, SD = 0.36) further indicates that teachers provide structured support for learners who need guidance. This commonly involves modeling procedures, breaking down tasks into manageable steps, and offering guided practice. While these strategies are effective, they require considerable preparation and are often carried out alongside administrative responsibilities such as report preparation, documentation, and participation in school programs mandated by the Department of Education (Department of Education, 2023).

Providing independent and advanced tasks (M = 3.80, SD = 0.40), although still rated extremely effective, obtained the lowest mean and showed slightly more variability in responses. This may suggest that enrichment opportunities for advanced learners are not always consistently implemented. In many public school contexts, teachers tend to prioritize learners who require remediation to ensure that minimum learning competencies are achieved. As a result, opportunities for acceleration may be limited by time constraints and competing instructional and administrative demands.

On the other hand, the use of differentiated questioning (M = 3.87, SD = 0.33) yielded the highest mean, indicating that teachers frequently use questioning techniques to promote higher-order thinking. In classroom practice, this may involve asking open-ended questions, encouraging learners to explain their reasoning, and facilitating discussions.

These findings are supported by existing literature on differentiated instruction. Process differentiation involves varying instructional methods and learning activities to address learners' readiness and interests (Tomlinson, 2017). Heacox (2012) emphasized that flexible pacing and varied strategies are essential in diverse classrooms, while Strickland (2007) highlighted the role of scaffolding and questioning in enhancing learner engagement. The present findings align with these perspectives, suggesting that teachers are able to implement process differentiation practices despite the structural and contextual challenges present in public elementary school settings.

Table 3

Perceived Level of Teachers' Differentiated Instruction as to Product

Indicators	Mean	SD	VI
1. Design performance tasks aligned with learners' varied skills, abilities, and readiness levels.	3.87	0.34	EE

2. Provide clear rubrics to guide the development of differentiated student outputs.	3.82	0.41	EE
3. Allow students to produce either individual or collaborative outputs as appropriate to the task.	3.85	0.36	EE
4. Modify assessment products by adjusting task format, difficulty level, or mode of response to accommodate learners with specific needs.	3.86	0.35	EE
5. Evaluate learning products based on competency standards rather than uniform outputs.	3.87	0.34	EE
Overall	**3.85**	**0.29**	**EE**

Legend: 1.0-1.80 (slightly effective), 1.81-2.60 (Moderately Effective), 2.61-3.20 (/Very Effective), and 3.21-4.00 Extremely Effective)

Table 3 presents the perceived level of teachers' differentiated instruction as to product among public elementary school teachers. The overall findings revealed an extremely effective level (M = 3.85, SD = 0.29), indicating that teachers are generally able to design and assess varied student outputs aligned with learners' abilities, skills, and readiness levels. The relatively low standard deviation suggests that responses are consistent, pointing to a commonly observed practice across similar classroom contexts.

This result suggests that product differentiation is an established component of classroom assessment in public elementary schools. In many cases, teachers are expected to align assessment tasks with competency standards while accommodating learners with varying levels of understanding, as guided by policies of the Department of Education (Department of Education, 2023). As a result, assessment practices often require flexibility in both task design and evaluation.

Designing performance tasks aligned with learners' varied skills and abilities (M = 3.87, SD = 0.34) indicates that teachers are able to provide differentiated outputs suited to different learner levels. In actual classroom settings, this may involve assigning simplified tasks to learners who are still developing foundational skills, while offering more complex or open-ended outputs to those who demonstrate higher levels of readiness. However, preparing multiple versions of performance tasks can be time-intensive, particularly when teachers are simultaneously managing lesson preparation, checking outputs, and fulfilling administrative requirements.

Providing clear rubrics (M = 3.82, SD = 0.41), although still interpreted as extremely effective, obtained the lowest mean and showed relatively higher variability in responses. This may indicate that while rubrics are used, their level of detail and consistency may differ across teachers. In many public school contexts, teachers prepare rubrics to guide student outputs; however, due to time constraints, large class sizes, and the need to complete reports and documentation, these rubrics may not always be fully elaborated or thoroughly discussed with learners.

Allowing students to produce individual or collaborative outputs (M = 3.85, SD = 0.36) reflects flexibility in assessment practices. In practice, this may include group projects, pair work, or individual performance tasks. However, in classes that often reach 40 or more learners, facilitating collaborative work presents challenges in monitoring participation, ensuring equitable contribution, and maintaining classroom management, especially within limited instructional time.

Modifying assessment products by adjusting task format, difficulty, or mode of response (M = 3.86, SD = 0.35) further demonstrates teachers' responsiveness to learners' specific needs. In actual classroom situations, this may involve allowing alternative forms of responses, such as oral explanations instead of written outputs, or simplifying instructions for learners who require additional support. While these practices promote inclusivity, they also require careful planning and additional effort, often carried out alongside other school responsibilities and compliance-related tasks.

Evaluating learning products based on competency standards rather than uniform outputs (M = 3.87, SD = 0.34) indicates that teachers prioritize mastery of learning competencies over standardized outputs. This suggests a shift away from one-size-fits-all assessment toward more learner-centered evaluation. However, this approach requires careful judgment, consistent documentation, and alignment with grading policies, which can become particularly demanding during peak periods such as quarterly assessments and submission of learner reports.

These findings are supported by existing literature on differentiated instruction. Product differentiation allows learners to demonstrate understanding in varied ways based on their readiness and interests (Tomlinson, 2017). Hall, Strangman, and Meyer (2003) emphasized that flexible assessment approaches enhance learner engagement and accessibility, while Brookhart (2013) highlighted the importance of clear criteria and varied outputs in effective assessment practices. The present findings align with these perspectives, indicating that teachers are able to implement differentiated product design while navigating the practical demands of public elementary school settings.

Table 4

Perceived Level of Teachers' Differentiated Instruction as to Learning Environment

Indicators	Mean	SD	VI
1. Cultivate a classroom climate where learner diversity is respected and valued.	3.91	0.29	EE
2. Establish classroom routines that support diverse academic and behavioral needs.	3.90	0.30	EE
3. Create a safe and inclusive environment that encourages expression.	3.90	0.31	EE
4. Promote consistent respect, empathy, and cooperation among learners.	3.91	0.29	EE
5. Utilize visual, auditory, and tactile supports to enhance understanding and accessibility.	3.89	0.32	EE
Overall	**3.90**	**0.25**	**EE**

Legend: 1.0-1.80 (slightly effective), 1.81-2.60 (Moderately Effective), 2.61-3.20 (/Very Effective), and 3.21-4.00 Extremely Effective)

Table 4 presents the perceived level of teachers' differentiated instruction as to learning environment among public elementary school teachers. The overall findings revealed an extremely effective level (M = 3.90, SD = 0.25), indicating that teachers are generally able to establish classroom environments that are inclusive, structured, and responsive to learners' diverse needs. The low standard deviation further suggests a high level of consistency in responses, reflecting shared practices across classrooms.

These results highlight the important role of the learning environment in supporting differentiated instruction. In many public elementary school settings, teachers are not only

responsible for delivering content but also for creating conditions that allow diverse learners to participate meaningfully. This includes managing classroom behavior, promoting inclusivity, and maintaining a supportive atmosphere aligned with the expectations of the Department of Education (Department of Education, 2023).

Cultivating a classroom climate where learner diversity is respected and valued (M = 3.91, SD = 0.29) obtained one of the highest means, indicating that teachers consistently promote inclusivity. In actual classroom settings, this may be observed through encouraging participation regardless of learners' ability levels and acknowledging individual differences. However, sustaining such a climate in classes that often exceed 40 learners requires continuous classroom management and deliberate effort to ensure that no learner is overlooked.

Similarly, establishing classroom routines that support diverse academic and behavioral needs (M = 3.90, SD = 0.30) reflects the importance of structure in managing large and diverse classes. Teachers often rely on clear procedures, guided transitions, and behavior management strategies to maintain order and maximize instructional time. Despite this, the consistency of routines may be influenced by external demands such as meetings, school programs, and administrative tasks, which can interrupt the flow of daily classroom activities.

Establishing a secure, welcoming, and expressive environment (M = 3.90, SD = 0.31) shows that educators provide students the chance to actively engage and exchange ideas. In actuality, this could entail candid conversations, Q&A sessions, and exercises that let students share what they've learned. However, since there are few opportunities for one-on-one attention or because they are afraid of making mistakes in front of their peers, some students may still be reluctant to participate in a packed classroom.

Promoting respect, empathy, and cooperation among students (M = 3.91, SD = 0.29) emphasises teachers' responsibility in creating positive social relationships. This is frequently reinforced in public school settings through cooperative assignments, group activities, and classroom policies that prioritise respect for one another. However, it takes time and consistent focus to manage peer dynamics and resolve disagreements, especially when instructors are juggling administrative and instructional duties.

The use of visual, auditory, and tactile supports (M = 3.89, SD = 0.32), while still rated extremely effective, obtained the lowest mean and showed slightly greater variability. This can be a reflection of how different classrooms have access to educational materials. Due to the scarcity of teaching resources, teachers in many public schools mostly rely on homemade or improvised materials. Although attempts are made to offer a variety of services, the degree to which these techniques are routinely used may be impacted by time, money, and resource availability limits.

These findings are supported by existing literature. A supportive and flexible learning environment is essential in effectively implementing differentiated instruction (Tomlinson, 2017). Sousa and Tomlinson (2018) emphasized that a positive classroom climate enhances learner engagement, while Bransford, Brown, and Cocking (2000) highlighted that inclusive and learner-centered environments promote deeper understanding. The present findings align with these perspectives, suggesting that teachers are able to create inclusive learning environments while navigating the practical constraints of public elementary school settings.

Table 5

Summary of Perceived Level of Teacher's Differentiated Instruction

Variables	Mean	SD	VI
1. Content	**3.87**	**0.29**	Extremely Effective

2. Process	**3.85**	**0.29**	Extremely Effective
3. Product	**3.85**	**0.29**	Extremely Effective
4. Learning Environment	**3.90**	**0.25**	Extremely Effective
Overall	**3.87**	**0.25**	Extremely Effective

Legend: 1.0-1.80 (slightly effective), 1.81-2.60 (Moderately Effective), 2.61-3.20 (Very Effective), and 3.21-4.00 Extremely Effective)

Table 5 presents the summary of the perceived level of teachers' differentiated instruction across four key dimensions: content, process, product, and learning environment. The overall result yielded an extremely effective level (M = 3.87, SD = 0.25), indicating that differentiated instruction is consistently practiced among public elementary school teachers. The low standard deviation suggests a high degree of agreement among respondents, reflecting a shared pattern of instructional practices across similar school contexts.

When considered collectively, the results indicate that educators may include various aspects of differentiation into their everyday teaching, striking a balance between the delivery of material, instructional procedures, methods of evaluation, and the classroom setting. This reflects the Department of Education's expectations for instructors in public primary school settings to satisfy curricular standards and institutional requirements while also attending to the different needs of their students (Department of Education, 2023).

The learning environment had the highest mean (M = 3.90, SD = 0.25) of the four variables, showing that instructors consistently provide inclusive and encouraging learning environments. This implies that instructors place a high priority on fostering an environment where students feel secure, respected, and inspired to engage, especially in classes with sizable enrolments and diverse learner profiles. This is seen in many public school settings by the implementation of set routines, the rewarding of good behaviour, and intentional initiatives to promote cooperation and respect among students.

Content differentiation also registered a high mean (M = 3.87, SD = 0.29), indicating that teachers are able to adjust instructional materials and topics to match learners' readiness and needs. In actuality, this frequently entails changing the course material, making ideas simpler, or offering enrichment activities. Due to restricted availability to pre-made resources, these methods often rely on teacher-developed materials, necessitating more preparation time in addition to other teaching and administrative duties.

Similarly, product differentiation (M = 3.85, SD = 0.29) reflects teachers' ability to provide varied ways for learners to demonstrate understanding. This includes performance tasks, projects, and alternative assessment formats that accommodate different learner strengths. While these approaches support more inclusive assessment, they also demand careful planning, clear criteria, and extensive checking, particularly in classes with a high number of learners and tight reporting timelines.

Process differentiation, which obtained the lowest mean (M = 3.85, SD = 0.29), remains within the extremely effective level but appears relatively more demanding to implement consistently. In order to meet the demands of their students, teachers must adapt their teaching methods, pace, and learning activities. Maintaining such flexibility in real-world classroom settings can be difficult because of time constraints, demands for classroom management, and the need to strike a balance between teaching and non-teaching responsibilities including participation in school activities, meetings, and paperwork.

Overall, while all four components are practiced at an extremely effective level, the variation in mean scores suggests differences in the level of effort, time, and resources required for each dimension. While process and product differentiation need more complicated and resource-intensive implementation, learning environments seem to be the most consistently maintained. These results align with Tomlinson's (2017) differentiated teaching approach, which highlights the interdependent roles of learning environment, process, product, and content. Additionally, Hall, Strangman, and Meyer (2003) emphasised the value of differentiation in improving student engagement, while Sousa and Tomlinson (2018) emphasised the significance of a supportive classroom atmosphere. All of these viewpoints lend credence to the current research showing that supportive classroom environments and instructional flexibility are necessary for successful differentiation.

Part II. Level of Teachers' Workload

Table 6

Perceived Level of Teachers' Workload in Teaching-related tasks as to Planning

Indicators	Mean	SD	VI
Planning			
1. Set clear learning objectives before instruction.	3.94	0.25	VC
2. Design learning activities ahead of time.	3.88	0.32	VC
3. Organize instructional materials in advance.	3.88	0.32	VC
4. Identify instructional strategies appropriate to the learners.	3.90	0.30	VC
Overall	3.90	0.25	VC

Legend: 1.0-1.80 (Unclear), 1.81-2.60 (Slightly Clear), 2.61-3.20 (Clear), 3.21-4.00 (Very Clear)

Table 6 presents the perceived level of teachers' workload in teaching-related tasks as to planning among public elementary school teachers. The overall result yielded a very clear level (M = 3.90, SD = 0.25), indicating that planning-related responsibilities are well-defined and consistently understood by teachers. The low standard deviation further suggests that respondents share similar experiences regarding the expectations and structure of planning tasks, reflecting a common workload pattern across public school settings.

This finding suggests that planning is a highly structured component of teachers' professional responsibilities. The Department of Education's curriculum standards and institutional requirements, which involve the development of lesson goals, instructional methodologies, and learning materials prior to instruction, provide as a direction for planning in public primary schools (Department of Education, 2023). Teachers are therefore need to plan their lectures methodically in order to guarantee that they are in line with the required competences and learning objectives.

Setting clear learning objectives before instruction (M = 3.94, SD = 0.25) obtained the highest mean, indicating that teachers consistently establish instructional goals prior to lesson delivery. In practice, this involves aligning lesson objectives with Most Essential Learning Competencies (MELCs) and ensuring that intended outcomes are clearly defined. While this contributes to more focused instruction, it also requires teachers to regularly review curriculum guides and adapt objectives based on learners' current levels of understanding.

Designing learning activities ahead of time (M = 3.88, SD = 0.32) and organizing instructional materials in advance (M = 3.88, SD = 0.32) further reflect the demands of lesson preparation. Teachers in many public school settings make activity sheets, Daily Lesson Logs (DLLs), and instructional materials that are appropriate for their students. A large portion of this preparation comprises teacher-generated materials, which can be time-consuming, especially when addressing various student needs within a single classroom, due to limited availability to standardised or ready-made resources.

Identifying instructional strategies appropriate to the learners (M = 3.90, SD = 0.30) highlights the need for deliberate and informed planning. Teachers must consider variations in learner readiness, engagement, and prior knowledge when selecting strategies. In classrooms with large enrollments and mixed-ability learners, this often requires balancing differentiated approaches with time constraints and curriculum pacing. As a result, planning becomes both a cognitive and practical task that demands careful decision-making.

Despite the clarity and structure of planning tasks, these responsibilities contribute significantly to teachers' overall workload. Planning is rarely done in isolation; it is often carried out alongside other responsibilities such as checking outputs, preparing reports, attending meetings, and participating in school programs. In many cases, teachers extend their working hours beyond the school day to complete planning requirements, which may affect their work-life balance and overall well-being.

These findings are supported by existing literature on teacher workload and instructional planning. Planning has been identified as a fundamental yet time-intensive aspect of teaching, requiring both pedagogical and organizational skills (Darling-Hammond et al., 2017). Similarly, OECD (2020) reported that teachers spend a significant portion of their time on lesson preparation and related tasks, contributing to overall workload demands. Furthermore, Richards (2013) emphasized that effective lesson planning involves careful alignment of objectives, materials, and strategies, which requires sustained effort and professional judgment. The present findings align with these studies, suggesting that while planning tasks are clearly defined and consistently implemented, they remain a substantial component of teachers' workload in public elementary school settings.

Table 7

Perceived Level of Teachers' Workload in Teaching-related tasks as to Instruction

Indicators	Mean	SD	VI
Instruction			
1. Deliver lessons according to intended objectives.	3.92	0.28	VC
2. Facilitate meaningful learning experiences.	3.92	0.27	VC
3. Manage instructional time effectively by allocating appropriate time for each learning activity.	3.87	0.34	VC
4. Integrate technology and digital tools to enhance instruction and student engagement.	3.83	0.39	VC
5. Implement learner-centered teaching strategies that encourage active participation and independent learning.	3.90	0.31	VC
Overall	**3.89**	**0.25**	**VC**

Legend: 1.0-1.80 (Unclear), 1.81-2.60 (Slightly Clear), 2.61-3.20 (Clear), 3.21-4.00 (Very Clear)

Table 7 presents the perceived level of teachers' workload in teaching-related tasks as to instruction among public elementary school teachers. The overall result yielded a very clear level (M = 3.89, SD = 0.25), indicating that instructional responsibilities are well-defined and consistently carried out in classroom practice. The relatively low standard deviation suggests that teachers share similar experiences regarding the clarity and expectations of instructional tasks, reflecting a common understanding of teaching roles across public school settings.

This finding indicates that instruction, as a core function of teaching, remains structured and guided by established standards. In public elementary schools, teachers are expected to deliver lessons aligned with prescribed competencies and curriculum frameworks set by the Department of Education (Department of Education, 2023). As such, instructional delivery is not only routine but also shaped by accountability measures, classroom demands, and learner diversity.

Delivering lessons according to intended objectives (M = 3.92, SD = 0.28) and facilitating meaningful learning experiences (M = 3.92, SD = 0.27) both obtained the highest means, indicating that teachers consistently focus on achieving lesson goals while engaging learners in the process. In actual classroom settings, this involves aligning instruction with learning competencies, using examples that are relevant to learners' contexts, and ensuring that activities contribute to understanding. However, achieving both alignment and engagement simultaneously can be demanding, particularly in large classes where learners exhibit varying levels of readiness and participation.

Managing instructional time effectively (M = 3.87, SD = 0.34) reflects teachers' efforts to allocate sufficient time for different parts of the lesson. In practice, teachers often balance time between lesson introduction, discussion, activities, and assessment within a limited class period. This becomes more complex when interruptions such as administrative tasks, school activities, or unexpected classroom situations arise, which may affect the pacing and flow of instruction.

The integration of technology and digital tools (M = 3.83, SD = 0.39), while still interpreted as very clear, obtained the lowest mean and showed relatively higher variability in responses. This suggests that while teachers recognize the role of technology in enhancing instruction, its implementation may differ across contexts. In many public schools, access to digital tools, stable internet connection, and functional devices remains inconsistent. As a result, teachers may rely on available resources or adapt by using limited technological support, which affects the extent to which technology can be fully integrated into daily instruction.

Implementing learner-centered teaching strategies (M = 3.90, SD = 0.31) further highlights teachers' efforts to engage students actively in the learning process. This may include interactive discussions, collaborative tasks, and activities that encourage independent thinking. However, in classrooms with a high number of learners, sustaining active participation and monitoring individual engagement can be challenging, requiring strong classroom management skills and continuous facilitation.

Despite the clarity of instructional tasks, these responsibilities contribute significantly to teachers' overall workload. Instruction is not limited to classroom delivery but involves continuous monitoring of learners, adjusting strategies, and responding to diverse needs in real time. These demands are often carried out alongside other responsibilities such as lesson preparation, assessment, documentation, and participation in school programs, which collectively increase the complexity of teachers' daily workload.

These findings are supported by existing literature on instructional practices and teacher workload. Effective instruction requires alignment between objectives, teaching strategies, and learner engagement (Darling-Hammond et al., 2017). Similarly, OECD (2020) highlighted that classroom teaching involves multiple simultaneous tasks, including time management, student engagement, and instructional decision-making. Furthermore, Hattie (2009) emphasized that learner-centered strategies and effective instructional practices significantly influence student achievement. The present findings align with these perspectives, suggesting that while instructional tasks are clearly defined, they remain cognitively and practically demanding within the context of public elementary school teaching.

Table 8

Perceived Level of Teachers' Workload in Teaching-related tasks as to Monitoring Students' Progress

Indicators	Mean	SD	VI
Monitoring Students' Progress			
1. Track my learners' academic progress.	3.93	0.26	VC
2. Check and record student outputs regularly.	3.91	0.29	VC
3. Use varied formative and summative assessment tools to gauge learners' understanding and performance.	3.92	0.27	VC
4. Monitor learners who need additional academic support.	3.90	0.30	VC
5. Provide enrichment or advanced activities for high-performing learners.	3.89	0.32	VC
Overall	**3.91**	**0.24**	**VC**

Legend: 1.0-1.80 (Unclear), 1.81-2.60 (Slightly Clear), 2.61-3.20 (Clear), 3.21-4.00 (Very Clear)

Table 8 presents the perceived level of teachers' workload in teaching-related tasks as to monitoring students' progress among public elementary school teachers. The overall result yielded a very clear level (M = 3.91, SD = 0.24), indicating that tasks related to tracking and evaluating learners' progress are well-defined and consistently practiced. The low standard deviation suggests that teachers have similar experiences regarding the expectations and demands of monitoring student performance, reflecting a shared pattern across public school settings.

This finding implies that monitoring students' progress is a structured and integral component of teachers' daily responsibilities. In public elementary schools, teachers are expected to regularly assess, document, and report learners' academic performance in alignment with standards set by the Department of Education (Department of Education, 2023). As a result, monitoring is not limited to periodic assessment but is an ongoing process embedded in everyday instruction.

Tracking learners' academic progress (M = 3.93, SD = 0.26) obtained the highest mean, indicating that teachers consistently observe and document student performance. In practice, this involves recording scores, reviewing outputs, and identifying patterns in learners' strengths and difficulties. While this supports informed instructional decisions, it also requires systematic documentation and careful attention to each learner's progress over time.

Similarly, checking and recording student outputs regularly (M = 3.91, SD = 0.29) highlights the routine nature of assessment-related tasks. Teachers often handle a substantial

volume of written work, performance outputs, and activity sheets, especially in classes with large enrollments. This process can be time-consuming, particularly during peak periods such as quarterly assessments, where grading, encoding of results, and preparation of report cards must be completed within limited timelines.

The use of varied formative and summative assessment tools (M = 3.92, SD = 0.27) further reflects teachers' efforts to evaluate learners comprehensively. In actual classroom settings, this may include quizzes, performance tasks, observations, and written assessments. While varied assessment provides a more accurate measure of learning, it also increases the complexity of monitoring, as teachers must design, administer, and interpret multiple forms of evaluation while ensuring alignment with learning competencies.

Monitoring learners who need additional academic support (M = 3.90, SD = 0.30) indicates that teachers actively identify and assist those who require remediation. This often involves providing additional exercises, conducting follow-up instruction, or giving individualized attention. However, in classrooms with diverse learner needs and limited time, sustaining consistent support for all struggling learners can be challenging.

Providing enrichment or advanced activities for high-performing learners (M = 3.89, SD = 0.32), although still rated very clear, obtained the lowest mean and showed slightly greater variability. This suggests that enrichment practices may not always be implemented as consistently as other monitoring tasks. In many public school contexts, teachers tend to prioritize learners who need remediation to ensure that minimum competencies are achieved, which may limit opportunities for extending learning among advanced students.

Despite the clarity of monitoring tasks, these responsibilities significantly contribute to teachers' overall workload. Monitoring requires continuous assessment, documentation, and feedback, often extending beyond regular class hours. Teachers must balance these demands with other responsibilities such as lesson planning, instructional delivery, and administrative work, making progress monitoring both essential and time-intensive.

These findings are supported by existing literature on assessment and teacher workload. Continuous monitoring of student progress is essential in informing instruction and improving learning outcomes (Black & Wiliam, 2009). In a similar vein, OECD (2020) highlighted that among the most time-consuming parts of teaching are procedures connected to evaluation, such as verifying and documenting results. Additionally, Brookhart (2013) emphasised that successful evaluation include giving insightful comments to enhance learning in addition to assessing performance. These viewpoints are supported by the current findings, which indicate that even if tracking students' progress is well-defined and regularly done, it is nevertheless a difficult aspect of instructors' workloads.

Table 9
Summary of Perceived Level of Teacher's Workload in Teaching-Related Tasks

Variables	Mean	SD	VI
1.Planning	3.90	0.25	Very Clear
2. Instruction	3.89	0.25	Very Clear
3. Monitoring Students' Progress	3.91	0.24	Very Clear
Overall	**3.90**	**0.22**	**Very Clear**

Legend: 1.0-1.80 (Unclear), 1.81-2.60 (Slightly Clear), 2.61-3.20 (Clear), 3.21-4.00 (Very Clear)

Table 9 presents the summary of the perceived level of teachers' workload in teaching-related tasks across three key areas: planning, instruction, and monitoring students' progress. The overall result yielded a very clear level (M = 3.90, SD = 0.22), indicating that teaching-related responsibilities are well-defined and consistently experienced among public elementary school teachers. The low standard deviation further suggests a high level of agreement among respondents, reflecting a shared understanding of the structure and expectations of these tasks.

When considered collectively, the results show that fundamental teaching duties, such as lesson planning, instructional delivery, and evaluation, are methodically included into instructors' everyday tasks. The Department of Education's curricular standards, assessment guidelines, and reporting regulations govern these activities in public primary school settings (Department of Education, 2023). Teachers therefore work inside a defined framework that outlines the tasks that must be completed before to, during, and following instruction.

Among the three areas, monitoring students' progress obtained the highest mean (M = 3.91, SD = 0.24), indicating that assessment-related tasks are perceived as the most clearly defined and consistently implemented. This suggests that teachers place strong emphasis on tracking learner performance through regular checking, recording of outputs, and use of varied assessment tools. In practice, this includes managing large volumes of student work, preparing grades, and completing report requirements within specified timelines, particularly during grading periods.

Planning (M = 3.90, SD = 0.25) also registered a high level, reflecting the structured nature of lesson preparation. Teachers are expected to develop clear objectives, design activities, and prepare instructional materials in advance, often guided by prescribed competencies. However, planning tasks frequently extend beyond school hours, as teachers allocate additional time to prepare materials, especially in contexts where resources are limited and instructional tools are largely self-developed.

Meanwhile, instruction (M = 3.89, SD = 0.25), although slightly lower than the other areas, remains within the very clear level. This suggests that while instructional tasks are well-defined, they may be more complex to execute consistently due to real-time classroom demands. Delivering lessons, managing time, engaging learners, and adjusting strategies simultaneously require continuous decision-making, particularly in classrooms with diverse learner needs and large enrollments.

The slight variation in mean scores across the three areas reflects differences in the nature and demands of each task. Monitoring and planning tend to follow more structured and document-driven processes, whereas instruction involves dynamic and immediate interactions that may be influenced by classroom conditions, learner behavior, and time constraints. This highlights the multifaceted nature of teaching, where clearly defined responsibilities still vary in terms of execution and intensity.

Overall, the findings suggest that while teaching-related tasks are clearly structured and consistently practiced, they collectively contribute to a substantial workload. These responsibilities are not performed in isolation but are interconnected, requiring teachers to continuously shift between planning, teaching, and assessment. Such demands may have implications for time management and workload balance, particularly when combined with additional non-teaching duties.

These results are supported by existing literature on teacher workload. Teaching involves a combination of planning, instruction, and assessment, all of which require sustained time and effort (Darling-Hammond et al., 2017). OECD (2020) similarly reported that teachers' workload is largely driven by core instructional tasks, particularly assessment and preparation. The present findings align with these perspectives, suggesting that while teaching-related tasks are clearly defined, they remain demanding and central to teachers' professional responsibilities in public elementary school settings.

Table 10

Perceived Level of Teachers' Workload in Teaching Ancillary Functions as to Meetings and Professional Development

Indicators	Mean	SD	VI
Meetings and Professional Development			
1. Adjust my teaching schedule and preparation time to comply with mandated school and district meetings.	3.83	0.38	EU
2. Actively participate in scheduled LAC sessions to collaboratively reflect on teaching practices and improve classroom instruction.	3.91	0.29	EU
3. Actively engage in INSETs and trainings to enhance my professional knowledge and teaching skills.	3.91	0.29	EU
4. Manage meeting requirements that overlap with lesson preparation and instructional deadlines.	3.85	0.36	EU
Overall	**3.87**	**0.27**	**EU**

Legend: 1.0-1.80 (Slightly Useful), 1.81-2.60 (Moderately Useful), 2.61-3.20 (Very Useful), 3.21-4.00 (Extremely Useful)

Table 10 presents the perceived level of teachers' workload in teaching ancillary functions as to meetings and professional development among public elementary school teachers. The overall result yielded an extremely useful level (M = 3.87 SD = 0.27), indicating that teachers generally perceive meetings, Learning Action Cell (LAC) sessions, and professional development activities as beneficial to their instructional practice. The relatively low standard deviation suggests that responses are consistent, reflecting a shared perception of the value of these activities across respondents.

This finding suggests that while ancillary tasks such as meetings and trainings add to teachers' workload, they are recognized as meaningful components of professional growth. In public school settings, participation in meetings, LAC sessions, and In-Service Trainings (INSETs) is institutionalized as part of continuous professional development initiatives led by the Department of Education (Department of Education, 2023). These activities are designed to support teachers in improving instructional practices, aligning teaching strategies with current educational standards, and addressing classroom challenges.

Adjusting teaching schedules and preparation time to comply with mandated meetings (M = 3.83, SD = 0.38) obtained the lowest mean and showed relatively higher variability. This suggests that while teachers recognize the importance of meetings, the scheduling and frequency may pose challenges. In practice, meetings are often conducted during or close to instructional hours, requiring teachers to reorganize lesson plans, compress instructional time, or extend

preparation beyond regular working hours. This may create tension between attending required meetings and fulfilling classroom responsibilities.

Active participation in LAC sessions (M = 3.91, SD = 0.29) reflects teachers' engagement in collaborative professional learning. These sessions provide opportunities for teachers to share experiences, discuss instructional strategies, and reflect on classroom practices. In many public schools, LAC sessions serve as a platform for peer support and contextualized problem-solving, particularly in addressing learner diversity and instructional challenges.

Similarly, engagement in INSETs and trainings (M = 3.91, SD = 0.29) highlights teachers' commitment to continuous professional development. These activities are intended to enhance pedagogical knowledge and improve teaching competencies. However, while beneficial, such trainings are often conducted within limited timeframes or during periods that coincide with other responsibilities, requiring teachers to balance professional learning with ongoing instructional and administrative tasks.

Managing meeting requirements that overlap with lesson preparation and instructional deadlines (M = 3.85, SD = 0.36) further underscores the complexity of teachers' workload. In many cases, deadlines for reports, lesson planning, and classroom deliverables coincide with scheduled meetings and trainings. As a result, teachers are required to multitask and extend working hours to meet both instructional and institutional demands.

Overall, while meetings and professional development activities are perceived as highly useful, they contribute to the cumulative workload of teachers. These tasks, although beneficial, are often layered on top of core teaching responsibilities, creating challenges in time management and workload balance. The results indicate that while the usefulness of these activities is acknowledged, careful scheduling may be necessary to reduce interference with instructional duties.

These results are supported by existing literature on teacher professional development and workload. Professional learning activities, such as collaborative discussions and trainings, are essential in improving teaching quality and student outcomes (Darling-Hammond et al., 2017). OECD (2020) similarly emphasized that continuous professional development enhances teacher effectiveness but may also increase workload when not well-integrated into teachers' schedules. Furthermore, Avalos (2011) highlighted that meaningful professional development is most effective when it is sustained, collaborative, and aligned with teachers' actual classroom experiences. The present findings align with these perspectives, suggesting that while meetings and professional development activities are valuable, they also require careful management within the broader context of teachers' workload.

Table 11

Perceived Level of Teachers' Workload in Teaching Ancillary Functions as to Paperworks and Reporting

Indicators	Mean	SD	VI
Paperworks and Reporting			
1. Accomplish paperwork requirements within the available time.	3.83	0.38	EU
2. Complete school forms, reports, and documentation within set deadlines.	3.85	0.35	EU
3. Comply with paperwork requirements alongside my lesson preparation tasks.	3.83	0.39	EU

Indicators	Mean	SD	VI
4. manage multiple reporting tasks alongside my teaching responsibilities.	3.80	0.42	EU
5. Submit the required documents within the given timelines.	3.85	0.37	EU
Overall	**3.83**	**0.32**	**EU**

Legend: 1.0-1.80 (Slightly Useful), 1.81-2.60 (Moderately Useful), 2.61-3.20 (Very Useful), 3.21-4.00 (Extremely Useful)

Table 11 presents the perceived level of teachers' workload in teaching ancillary functions as to paperworks and reporting among public elementary school teachers. The overall result yielded an extremely useful level (M = 3.83, SD = 0.32), indicating that paperwork and reporting tasks are generally perceived as necessary and beneficial in supporting instructional accountability and school operations. The moderate standard deviation suggests some variability in responses, which may reflect differences in workload intensity and reporting demands across school contexts.

These findings imply that paperwork and reporting, although often time-consuming, are recognized as integral components of teachers' professional responsibilities. Teachers in public school settings must complete a variety of papers, including student records, school forms, progress reports, and other compliance-related obligations set out by the Department of Education (Department of Education, 2023). These assignments are essential for keeping an eye on student achievement, guaranteeing openness, and upholding institutional responsibility.

Accomplishing paperwork requirements within the available time (M = 3.83, SD = 0.38) reflects teachers' efforts to meet administrative expectations despite time constraints. In practice, this often involves completing documentation after instructional hours, especially when teaching schedules are already filled with lesson delivery and classroom management responsibilities. This indicates that while tasks are manageable, they frequently require additional time beyond regular working hours.

Similarly, completing school forms, reports, and documentation within set deadlines (M = 3.85, SD = 0.35) highlights the structured and deadline-driven nature of reporting tasks. Particularly during grading periods and compliance inspections, teachers are required to produce accurate and timely reports. This encourages order and efficiency, but it also puts pressure on educators to strike a balance between timeliness and correctness.

Complying with paperwork requirements alongside lesson preparation tasks (M = 3.83, SD = 0.39) further emphasizes the overlapping nature of teachers' responsibilities. In many cases, teachers handle documentation while simultaneously preparing lesson plans, instructional materials, and classroom activities. In addition to necessitating efficient time management, this simultaneous requirement may result in longer workdays and more work.

Managing multiple reporting tasks alongside teaching responsibilities (M = 3.80, SD = 0.42) obtained the lowest mean and showed the highest variability among the indicators. This suggests that teachers experience varying levels of difficulty in handling multiple administrative requirements. In actual school settings, the volume of reports, combined with teaching duties, may create periods of high workload, particularly when multiple deadlines coincide.

Submitting required documents within given timelines (M = 3.85, SD = 0.37) indicates that teachers generally comply with reporting expectations. However, meeting these timelines

often involves prioritizing administrative tasks alongside instructional responsibilities, which may affect the amount of time available for lesson preparation and learner engagement.

Overall, while paperwork and reporting are perceived as extremely useful, they represent a substantial component of teachers' ancillary workload. Although these jobs are necessary for accountability and documentation, they are frequently completed in tandem with teaching-related duties, which increases workload demands and time limits.

As a result, teachers are required to continuously shift between instructional and administrative roles, which may affect their efficiency and focus in both areas. Because documentation activities are often conducted after regular school hours, this overlap of responsibilities might also result in longer working hours. As a result, although documentation is essential, its cumulative nature may lead to a heavier burden and less time for preparing lessons. This situation may also contribute to increased stress and fatigue among teachers, potentially affecting their overall well-being and job satisfaction. Consequently, prolonged exposure to such demands may hinder teachers' ability to maintain work-life balance and sustain high-quality instructional practices.

The body of research on administrative demands and teacher workload supports these conclusions.Teachers' workload has been found to be significantly influenced by administrative duties, such as documentation and reporting (OECD, 2020). According to Darling-Hammond et al. (2017), documentation can cut into teaching and preparation time even while it promotes accountability and instructional progress. Furthermore, Torres (2016) highlighted that instructors may experience higher levels of stress and task strain due to an excessive amount of paperwork. These viewpoints are supported by the current findings, which indicate that while paperwork and reporting are important and required, they are nonetheless difficult parts of teachers' professional duties.

Table 12

Perceived Level of Teachers' Workload in Teaching Ancillary Functions as to Committee Work

Indicators	Mean	SD	VI
Committee Work			
1. Fulfill committee assignments in addition to my teaching duties.	3.86	0.37	EU
2. Participate in planning and implementing school programs and events.	3.83	0.39	EU
3. Accomplish committee tasks as part of my assigned professional responsibilities.	3.85	0.37	EU
4. Take part in committees that require after-school coordination.	3.85	0.37	EU
5.Balance tasks from teaching and committee roles.	3.82	0.42	**EU**
Overall	**3.84**	**0.33**	**EU**

Legend: 1.0-1.80 (Slightly Useful), 1.81-2.60 (Moderately Useful), 2.61-3.20 (Very Useful), 3.21-4.00 (Extremely Useful)

Table 12 presents the perceived level of teachers' workload in teaching ancillary functions as to committee work among public elementary school teachers. The overall result

yielded an extremely useful level (M = 3.84, SD = 0.33), indicating that committee-related responsibilities are generally viewed as beneficial to school operations and professional engagement. The moderate standard deviation suggests some variation in responses, which may reflect differences in committee assignments, scope of tasks, and frequency of involvement across schools.

These findings suggest that committee work is recognized as an important, though additional, component of teachers' roles. In public elementary schools, teachers are commonly assigned to various committees responsible for implementing school programs, organizing events, and supporting institutional initiatives under the Department of Education (Department of Education, 2023). While these roles contribute to school development, they are typically carried out alongside core teaching responsibilities.

Fulfilling committee assignments in addition to teaching duties (M = 3.86, SD = 0.37) indicates that teachers are generally able to take on these responsibilities as part of their professional roles. In practice, this may involve coordinating activities, preparing materials for school programs, or assisting in administrative functions. However, these tasks often require additional time and effort beyond regular classroom responsibilities.

Participation in planning and implementing school programs and events (M = 3.83, SD = 0.39) highlights teachers' involvement in school-wide initiatives such as celebrations, outreach activities, and institutional programs. Teachers may need to modify lesson plans or shorten instructional time in order to accommodate these activities, which support a comprehensive school climate.

Accomplishing committee tasks as part of assigned responsibilities (M = 3.85, SD = 0.37) further reflects the institutionalized nature of committee work. Teachers are required to do their duties effectively, frequently within allotted time frames. This encourages cooperation and accountability, but it also adds another level of duty that has to be handled in addition to administrative and instructional duties.

Taking part in committees that require after-school coordination (M = 3.85, SD = 0.37) indicates that committee responsibilities frequently extend beyond regular working hours. Meetings, planning sessions, and event preparations are often conducted after class time, which may reduce opportunities for rest or lesson preparation. This extended time commitment highlights how ancillary functions contribute to the overall workload of teachers.

Balancing tasks from teaching and committee roles (M = 3.82, SD = 0.42), which obtained the lowest mean and showed the highest variability, suggests that teachers experience differing levels of difficulty in managing multiple responsibilities. In some cases, the simultaneous demands of teaching, paperwork, and committee work may create periods of high workload, particularly during major school events or deadlines.

Overall, while committee work is perceived as extremely useful, it represents a significant addition to teachers' workload. These responsibilities support school operations and foster collaboration, yet they also require time, coordination, and sustained effort beyond instructional duties. The findings suggest that the value of committee work is acknowledged, but its demands may affect workload balance and time management.

These results are supported by existing literature on teacher workload and school responsibilities. Teachers often take on multiple roles beyond classroom instruction, including participation in school committees and programs, which contribute to their overall workload (OECD, 2020). Darling-Hammond et al. (2017) noted that while such roles support school improvement, they also increase the range of tasks teachers must manage. Furthermore,

Kelchtermans (2005) emphasized that teachers' professional responsibilities extend beyond teaching, encompassing collaborative and organizational roles within the school. The present findings align with these perspectives, suggesting that committee work, while valuable, remains a demanding aspect of teachers' ancillary functions.

Table 13

Summary of Perceived Level of Teacher's Workload in Teaching Ancillary Functions

Variables	Mean	SD	VI
1.Meetings and Professional Developments	3.87	0.27	Extremely Useful
2. Paperworks and Reportings	3.83	0.32	Extremely Useful
3. Committee Work	3.84	0.33	Extremely Useful
Overall	**3.85**	**0.27**	**Extremely Useful**

Legend: 1.0-1.80 (Slightly Useful), 1.81-2.60 (Moderately Useful), 2.61-3.20 (Very Useful), 3.21-4.00 (Extremely Useful)

Table 13 presents the summary of the perceived level of teachers' workload in teaching ancillary functions across three areas: meetings and professional development, paperworks and reporting, and committee work. The overall result yielded an extremely useful level (M = 3.85, SD = 0.27), indicating that ancillary tasks are generally perceived as beneficial components of teachers' professional responsibilities. The comparatively low standard deviation indicates a high degree of agreement among participants, indicating a common understanding of the importance of these roles in public elementary school environments.

Taken as a whole, the findings suggest that while ancillary functions extend beyond direct classroom instruction, they are recognized as essential in supporting school operations, professional growth, and institutional accountability. In public elementary schools, these responsibilities are embedded within the broader framework of duties expected by the Department of Education (Department of Education, 2023), where teachers are not only classroom facilitators but also active participants in school-wide initiatives and administrative processes.

Among the three areas, meetings and professional development obtained the highest mean (M = 3.87, SD = 0.27), indicating that these activities are perceived as the most useful. This suggests that teachers value opportunities for collaboration, reflection, and professional learning through LAC sessions, trainings, and meetings. These platforms are an important component of teachers' professional development since they offer opportunities for enhancing teaching methods and resolving issues in the classroom.

Committee work (M = 3.84, SD = 0.33) also registered a high level, reflecting teachers' involvement in planning and implementing school programs and activities. These duties support teacher cooperation and the school's general operation. The somewhat greater standard deviation, however, points to experience variability that might be impacted by variations in committee assignments, task allocation, and the frequency of school activities.

Meanwhile, paperworks and reporting obtained the lowest mean (M = 3.83, SD = 0.32), although still within the extremely useful level. This indicates that while documentation and reporting tasks are recognized as necessary, they may be perceived as more demanding or time-consuming compared to other ancillary functions. In practice, teachers manage multiple forms, reports, and documentation requirements, often within strict deadlines, which may contribute to increased workload pressure.

The variation in mean scores across the three areas reflects differences in how these ancillary tasks are experienced. Meetings and professional development are often viewed as growth-oriented and collaborative, while paperwork and reporting tend to be compliance-driven and repetitive in nature. Committee work, on the other hand, falls in between, combining elements of collaboration and administrative responsibility. These differences highlight the diverse nature of ancillary workload and its varying impact on teachers' daily tasks.

Overall, while all ancillary functions are perceived as extremely useful, they collectively contribute to the cumulative workload of teachers. These responsibilities are often performed alongside core teaching tasks, requiring teachers to balance instructional, administrative, and collaborative roles within limited time. As a result, the usefulness of these tasks does not necessarily reduce their demands but instead emphasizes the need for effective workload management.

These findings are supported by existing literature on teacher workload and professional responsibilities. Teachers' roles extend beyond classroom instruction to include administrative, collaborative, and professional development activities (OECD, 2020). Darling-Hammond et al. (2017) emphasized that while these functions contribute to school improvement and teacher effectiveness, they also increase workload demands. Additionally, Avalos (2011) noted that professional development activities are valuable for improving teaching practices, while administrative tasks such as reporting may be perceived as burdensome despite their necessity. The present findings align with these perspectives, suggesting that ancillary functions are both valuable and demanding components of teachers' professional work.

Part III. Level of Teachers' Provisions in the Development of 4Cs Learning Skills

Table 14

Perceived Level of Teachers' Provisions in the Development of 4Cs Learning Skills as to Creativity

Indicators	Mean	SD	VI
1. Create avenues for students to generate and share their unique ideas.	3.83	0.37	E
2. Provide opportunities for learners to use their imagination in tasks.	3.85	0.36	E
3. Design activities that let students develop distinctive and creative outputs.	3.83	0.38	E
4. Encourage learners to explore different solutions to a problem.	3.86	0.35	E
5. Promote self-expression through varied performance tasks.	3.86	0.35	E
Overall	**3.85**	**0.31**	**E**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 14 presents the perceived level of teachers' provisions in the development of 4Cs learning skills as to creativity among public elementary school teachers. The overall result yielded an excellent level (M = 3.85, SD = 0.31), indicating that teachers consistently provide opportunities that support learners' creative thinking, self-expression, and idea generation. The

relatively low standard deviation suggests that responses are generally consistent, reflecting a shared practice of integrating creativity into classroom instruction.

This finding suggests that creativity is actively embedded in teaching practices within public elementary school settings. Teachers are not only focused on content delivery but also on designing learning experiences that encourage learners to think beyond standard responses. In classrooms guided by the Department of Education (Department of Education, 2023), there is increasing emphasis on learner-centered approaches that promote critical and creative thinking as part of 21st-century skill development.

Creating avenues for students to generate and share unique ideas (M = 3.83, SD = 0.37) indicates that teachers encourage learners to express their thoughts through various classroom activities. In practice, this may be observed in structured discussions, sharing sessions, and collaborative group work. However, in classes with large enrollments, ensuring that all learners are given equal opportunities to participate can be challenging, as time and classroom management constraints may limit individual engagement.

Providing opportunities for learners to use their imagination in tasks (M = 3.85, SD = 0.36) reflects teachers' efforts to design engaging and meaningful learning experiences. Activities such as storytelling, role-playing, and project-based tasks are commonly used to stimulate imagination. In many public school contexts where resources are limited, teachers often rely on improvised or teacher-developed materials, demonstrating adaptability in fostering creativity despite constraints.

Designing activities that allow students to develop distinctive and creative outputs (M = 3.83, SD = 0.38) suggests that teachers promote originality and flexibility in how learners demonstrate understanding. This may involve allowing students to choose formats for their outputs, such as visual presentations, written work, or performances. However, implementing such varied outputs requires careful planning and time, particularly when teachers are also managing lesson preparation, assessment, and administrative responsibilities.

Encouraging learners to explore different solutions to a problem (M = 3.86, SD = 0.35) highlights the promotion of divergent thinking. In classroom practice, this may involve problem-solving activities where learners are guided to consider multiple perspectives rather than a single correct answer. While effective in developing higher-order thinking, facilitating such discussions in large classes can be time-intensive and requires strong facilitation skills.

Promoting self-expression through varied performance tasks (M = 3.86, SD = 0.35) further indicates that teachers provide learners with opportunities to showcase creativity in diverse ways. These may include presentations, artistic outputs, and performance-based assessments. Although such activities enhance engagement and learner participation, they also require additional preparation, materials, and time for implementation and evaluation.

Overall, the findings suggest that teachers are able to foster creativity among learners despite structural and contextual challenges. The consistently high ratings across indicators reflect a strong commitment to developing learners' creative abilities. However, factors such as large class sizes, limited instructional resources, and competing workload demands may influence the extent and sustainability of these practices.

These findings are supported by existing literature on 21st-century skills and creativity in education. Creativity is identified as a key competency that should be developed through opportunities for idea generation, innovation, and self-expression (Trilling & Fadel, 2009). Craft (2005) emphasized that creativity involves encouraging learners to think flexibly and produce original ideas, while Beghetto and Kaufman (2014) highlighted the importance of supportive

classroom environments and varied tasks in promoting creative thinking.

Table 15
Perceived Level of Teachers' Provisions in the Development of 4Cs Learning Skills as to Collaboration

Indicators	Mean	SD	VI
1. Facilitate group tasks that promote cooperation and shared responsibility.	3.85	0.37	E
2. Guide students to distribute responsibilities fairly during group work	3.86	0.35	E
3. Create a classroom environment that promotes student collaboration.	3.87	0.34	E
4. Encourage students to show respect for others' ideas when working together.	3.91	0.29	E
5. Promote teamwork as part of classroom learning.	3.88	0.33	E
Collaboration Mean	**3.87**	**0.28**	**E**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 15 presents the perceived level of teachers' provisions in the development of 4Cs learning skills as to collaboration among public elementary school teachers. The overall result yielded an excellent level (M = 3.87, SD = 0.28), indicating that teachers consistently provide opportunities for learners to engage in cooperative learning and shared classroom activities. The relatively low standard deviation suggests that responses are consistent, reflecting a common practice of integrating collaboration into instructional approaches.

This finding suggests that collaborative learning is a well-established component of classroom instruction in public elementary schools. Teachers are able to design learning experiences that encourage interaction, teamwork, and shared responsibility among learners. Within the framework promoted by the Department of Education (Department of Education, 2023), collaboration is recognized as a key element of learner-centered instruction and 21st-century skill development.

Facilitating group tasks that promote cooperation and shared responsibility (M = 3.85, SD = 0.37) indicates that teachers regularly implement activities that require learners to work together. In practice, this may involve group projects, peer-assisted learning, and collaborative problem-solving tasks. However, in classrooms with large enrollments, managing group dynamics and ensuring that all learners are actively involved can be challenging, particularly when time for monitoring is limited.

Guiding students to distribute responsibilities fairly during group work (M = 3.86, SD = 0.35) reflects teachers' efforts to structure collaboration effectively. Learners are often assigned specific roles to ensure participation and accountability within the group. While this supports equitable involvement, it requires continuous supervision to prevent unequal contribution or dependence on more active group members.

Creating a classroom environment that promotes collaboration (M = 3.87, SD = 0.34) further highlights teachers' role in establishing conditions that support interaction and teamwork. This may involve setting expectations for group work, encouraging peer support, and fostering a

culture of cooperation. However, sustaining such an environment requires consistent classroom management, particularly in settings where class size and limited space may affect group organization.

Encouraging learners to show respect for others' ideas (M = 3.91, SD = 0.29), which obtained the highest mean, indicates that teachers emphasize positive social interaction as part of collaborative learning. In classroom practice, this may be observed through guided discussions, peer feedback, and group reflections. These practices help learners develop not only academic skills but also interpersonal competencies essential for teamwork.

Promoting teamwork as part of classroom learning (M = 3.88, SD = 0.33) reflects teachers' consistent efforts to integrate collaboration across different learning activities. While group work enhances engagement and participation, preparing, facilitating, and assessing collaborative tasks can be time-consuming, particularly when teachers are also managing lesson preparation, assessment, and administrative responsibilities.

Overall, the results imply that despite contextual difficulties, educators may successfully promote teamwork. A strong commitment to encouraging collaboration and cooperative learning is demonstrated by the consistently excellent ratings across metrics. Large class numbers, time restraints, and workload demands, on the other hand, may have an impact on how thoroughly cooperation is adopted and observed in regular classroom practice.

These findings are supported by existing literature on collaborative learning. Cooperative learning has been shown to enhance students' academic achievement, social interaction, and teamwork skills (Johnson & Johnson, 2009). Vygotsky (1978) emphasized that learning is inherently social and occurs through interaction with others, while Slavin (2014) highlighted that structured group activities improve engagement and learning outcomes. The present findings align with these perspectives, suggesting that teachers play a critical role in developing collaboration skills through intentional and well-managed instructional practices.

Table 16

Perceived Level of Teachers' Provisions in the Development of 4Cs Learning Skills as to Communication

Indicators	Mean	SD	VI
1. Create opportunities for learners to express their thoughts clearly and confidently.	3.91	0.29	E
2. Encourage students to practice active listening during interactions.	3.91	0.29	E
3. Provide tasks that develop oral and written communication skills.	3.88	0.33	E
4. Guide learners in organizing and presenting their ideas effectively.	3.87	0.33	E
5. Integrate activities that enhance speaking, writing, and presentation skills.	3.89	0.32	E
Overall	**3.89**	**0.27**	**E**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 16 presents the perceived level of teachers' provisions in the development of 4Cs learning skills as to communication among public elementary school teachers. The overall result yielded an excellent level (M = 3.89, SD = 0.27), indicating that teachers consistently provide opportunities for learners to develop their oral and written communication skills. The relatively

low standard deviation suggests that responses are generally consistent, reflecting a shared practice of integrating communication-focused activities into classroom instruction.

This finding suggests that communication is an integral component of teaching practices in public elementary schools. Teachers are able to incorporate activities that promote expression, interaction, and dialogue as part of learner-centered instruction aligned with the goals of the Department of Education (Department of Education, 2023). As a result, learners are regularly exposed to opportunities that support both expressive and receptive communication skills.

Creating opportunities for learners to express their thoughts clearly and confidently (M = 3.91, SD = 0.29) indicates that teachers encourage active participation through various classroom activities. In practice, this may include recitations, sharing sessions, and guided discussions. However, in classrooms with large enrollments, providing equal opportunities for all learners to participate can be challenging, as limited time may restrict the number of students who can actively engage.

Encouraging students to practice active listening during interactions (M = 3.91, SD = 0.29) further highlights the importance of communication as a two-way process. During class conversations, teachers assist students in listening intently, responding correctly, and appreciating the contributions of others. Despite these efforts, it can be challenging to keep all children consistently engaged, especially when involvement levels differ and some kids are more reluctant to talk.

Providing tasks that develop oral and written communication skills (M = 3.88, SD = 0.33) reflects teachers' efforts to strengthen learners' expressive abilities through structured activities. These may include writing exercises, storytelling, short presentations, and simple reporting tasks. While effective, these activities require time for preparation, checking, and feedback, which adds to teachers' instructional workload.

Guiding learners in organizing and presenting their ideas effectively (M = 3.87, SD = 0.33) indicates that teachers support learners in developing clarity and coherence in communication. In classroom practice, this may involve modeling responses, providing frameworks for presentations, and giving feedback on organization of ideas. However, learners' varying levels of confidence and language proficiency may influence how effectively they are able to communicate.

Integrating activities that enhance speaking, writing, and presentation skills (M = 3.89, SD = 0.32) further demonstrates the use of varied instructional strategies to support communication development. These activities may include group discussions, peer interactions, and performance-based tasks. However, the regular implementation of such strategies may be affected by time constraints, class size, and competing instructional and administrative demands.

Overall, the findings suggest that teachers are able to foster communication skills effectively despite contextual challenges. The consistently high ratings across indicators reflect a strong commitment to developing learners' ability to express ideas, interact with others, and participate actively in the learning process. However, factors such as large class sizes, limited instructional time, and workload demands may influence the depth and frequency of communication-focused activities.

These findings are supported by existing literature on communication and 21st-century skills. Communication is considered a fundamental competency that should be developed through active participation and meaningful interaction (Trilling & Fadel, 2009). Mercer and Littleton (2007) emphasized that classroom dialogue supports cognitive development, while Alexander (2008) highlighted the role of dialogic teaching in promoting learner engagement and

understanding. The present findings align with these perspectives, suggesting that teachers play a crucial role in developing communication skills through structured and interactive classroom practices.

Table 17

Perceived Level of Teachers' Provisions in the Development of 4Cs Learning Skills as to Critical Thinking

Indicators	Mean	SD	Verbal Interpretation
1. Ask strategic questions that promote deep learning by requiring students to analyze and evaluate information.	3.84	0.37	Excellent
2. Encourage learners to justify their answers with evidence.	3.84	0.37	Excellent
3. Provide problem-solving activities that challenge students' reasoning.	3.85	0.36	Excellent
4. Help my learners make connections between lessons and real-life situations	3.87	0.34	Excellent
5. Guide learners to reflect on and assess their own work critically.	3.86	0.35	Excellent
Overall	**3.85**	**0.30**	**Excellent**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 17 presents the perceived level of teachers' provisions in the development of 4Cs learning skills as to critical thinking among public elementary school teachers. The overall result yielded an excellent level (M = 3.85, SD = 0.30), indicating that teachers consistently engage learners in activities that promote analysis, evaluation, and reflective thinking. The relatively low standard deviation suggests that responses are generally consistent, reflecting a shared practice of integrating critical thinking into classroom instruction.

This finding suggests that critical thinking is actively embedded in teaching practices in public elementary schools. Teachers are able to design learning experiences that go beyond recall and encourage learners to analyze information, justify responses, and reflect on their understanding. Within the framework promoted by the Department of Education (Department of Education, 2023), critical thinking is emphasized as a key component of 21st-century learning and learner-centered instruction.

Asking strategic questions that promote deep learning (M = 3.84, SD = 0.37) indicates that teachers frequently use questioning techniques to stimulate higher-order thinking. In classroom practice, this may involve asking learners to explain their answers, compare ideas, or evaluate situationsHowever, it might be difficult to engage every student in higher-order questions in classrooms with huge enrolments since time limits may restrict the depth and frequency of contact.

Encouraging learners to justify their answers with evidence (M = 3.84, SD = 0.37) further reflects the development of reasoning skills. Teachers guide learners to support their responses with explanations or examples, promoting deeper understanding. Despite this, some learners may experience difficulty articulating their reasoning, particularly when they lack confidence or sufficient prior knowledge.

Providing problem-solving activities that challenge students' reasoning (M = 3.85, SD = 0.36) demonstrates teachers' efforts to develop analytical thinking. These activities may include situational questions, guided problem-solving tasks, or simple investigations. While effective, designing and implementing such activities requires careful planning and preparation, especially when teachers are managing multiple instructional and administrative responsibilities.

Helping learners make connections between lessons and real-life situations (M = 3.87, SD = 0.34) obtained the highest mean, indicating that teachers emphasize the relevance of learning. In practice, this may involve linking concepts to learners' daily experiences or community contexts. However, ensuring that all learners are able to meaningfully apply these connections can be challenging in classrooms with diverse levels of understanding.

Guiding learners to reflect on and assess their own work critically (M = 3.86, SD = 0.35) indicates that teachers promote metacognitive skills and self-evaluation. Reflection activities, feedback sessions, and guided self-assessment help learners become more aware of their learning processes. However, the implementation of reflective practices may be affected by time limitations and the need to balance multiple classroom tasks.

Overall, the findings suggest that teachers are able to foster critical thinking skills effectively despite contextual challenges. The consistently high ratings across indicators reflect a strong commitment to developing learners' analytical and reflective abilities. However, factors such as large class sizes, limited instructional time, and workload demands may influence the depth and consistency of critical thinking practices in the classroom.

These findings are supported by existing literature on critical thinking and 21st-century skills. Critical thinking involves purposeful, self-regulatory judgment that includes analysis, evaluation, and inference (Facione, 2011).

Table 18

Summary of Perceived Level of Teachers' Provisions in the Development of 4Cs Learning Skills

Indicators	Mean	SD	VI
1. Creativity	3.85	0.31	Excellent
2. Collaboration	3.87	0.28	Excellent
3. Communication	3.89	0.27	Excellent
4. Critical Thinking	3.85	0.30	Excellent
Overall	**3.87**	**0.26**	**Excellent**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 18 presents the summary of the perceived level of teachers' provisions in the development of 4Cs learning skills across four domains: creativity, collaboration, communication, and critical thinking. The overall result yielded an excellent level (M = 3.87, SD = 0.26), indicating that teachers consistently integrate 21st-century skills into classroom instruction. The relatively low standard deviation suggests a high level of agreement among respondents, reflecting a shared practice of embedding 4Cs competencies in teaching.

Taken as a whole, the findings suggest that teachers are able to balance multiple dimensions of 21st-century skill development within their instructional practices. In public elementary school settings, this reflects the growing emphasis on learner-centered approaches aligned with the goals of the Department of Education (Department of Education, 2023), which highlight the importance of preparing learners for real-world challenges through holistic skill

development.

Among the four domains, communication obtained the highest mean (M = 3.89, SD = 0.27), indicating that teachers place strong emphasis on developing learners' ability to express ideas, participate in discussions, and engage in meaningful interactions. This implies that everyday classroom activities like recitations, debates, and written assignments increasingly regularly use communication skills. However, it is still difficult to guarantee that every student participates equally in classrooms with huge enrolments.

Collaboration (M = 3.87, SD = 0.28) also registered a high level, reflecting the regular use of group work and cooperative learning strategies. These practices promote interaction, shared responsibility, and peer learning. Nevertheless, managing group dynamics, ensuring equitable participation, and monitoring multiple groups simultaneously can be demanding, particularly in classes with diverse learner abilities and limited time.

Critical thinking (M = 3.85, SD = 0.30) and creativity (M = 3.85, SD = 0.31), while slightly lower than the other domains, remain within the excellent level. These findings indicate that teachers provide opportunities for learners to analyze information, solve problems, and express ideas creatively. However, compared to communication and collaboration, these domains often require more complex instructional design, extended time, and deeper facilitation, which may explain the slight variation in mean scores.

The differences in mean values across the four domains highlight the varying levels of effort, time, and instructional complexity associated with each skill. Communication and collaboration are more readily integrated into routine classroom interactions, whereas creativity and critical thinking often require more deliberate planning and structured activities. This suggests that while all 4Cs are present in instruction, their implementation may differ in depth and consistency.

Overall, the findings indicate that teachers demonstrate a strong commitment to fostering 21st-century skills among learners despite contextual challenges. These include large class sizes, limited instructional time, and competing workload demands such as planning, assessment, and administrative tasks. The ability to sustain high levels across all four domains reflects teachers' adaptability and dedication to effective teaching practices.

These findings are supported by existing literature on 21st-century skills. The 4Cs—creativity, collaboration, communication, and critical thinking—are essential competencies for learners in the modern educational landscape (Trilling & Fadel, 2009). The Partnership for 21st Century Learning (2019) emphasized that these skills should be integrated into teaching and learning processes, while Voogt and Roblin (2012) highlighted the critical role of teachers in facilitating their development. The present findings align with these perspectives, suggesting that effective integration of 4Cs depends on both instructional practices and supportive learning environments.

Part IV. Level of Teachers' Well-Being

Table 19

Perceived Level of Teachers' Well-Being as to Emotional Well-Being

Indicators	Mean	SD	VI
1. Maintain a positive outlook despite work-related challenges.	3.87	0.35	E
2. Manage my emotions well during stressful classroom	3.80	0.41	E

Indicators	Mean	SD	VI
situations.			
3. Remain calm and composed even when under pressure.	3.78	0.44	E
4. Feel emotionally supported by my colleagues when I am overwhelmed.	3.80	0.43	E
5. Cope effectively with stress brought by my teaching responsibilities.	3.78	0.42	E
Overall	**3.81**	**0.34**	**E**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 19 presents the perceived level of teachers' well-being as to emotional well-being among public elementary school teachers. The overall result yielded an excellent level (M = 3.81, SD = 0.34), indicating that teachers are generally able to maintain emotional stability, regulate stress, and sustain a positive outlook despite the demands of their profession. The moderate standard deviation suggests some variability in responses, reflecting differences in how teachers experience and manage emotional challenges in their work environment.

This finding suggests that emotional resilience is evident among teachers in public elementary school settings. Despite the complexity of their roles—ranging from instructional delivery to administrative and ancillary responsibilities—teachers demonstrate the capacity to manage emotional demands. Within the context of expectations set by the Department of Education (Department of Education, 2023), teachers are often required to maintain professionalism and composure, even under demanding conditions.

Maintaining a positive outlook despite work-related challenges (M = 3.87, SD = 0.35) obtained the highest mean, indicating that teachers are generally able to remain optimistic in the face of daily demands. In practice, this may involve sustaining motivation while handling large class sizes, multiple preparations, and competing responsibilities. However, maintaining this level of positivity consistently may require ongoing emotional effort, particularly during periods of increased workload.

Managing emotions during stressful classroom situations (M = 3.80, SD = 0.41) reflects teachers' ability to regulate their emotional responses in dynamic and sometimes unpredictable environments. Classroom situations often involve addressing diverse learner needs, behavioral concerns, and unexpected disruptions. While teachers demonstrate effective emotional control, the relatively higher variability suggests that such experiences may differ depending on classroom conditions and individual coping strategies.

Remaining calm and composed under pressure (M = 3.78, SD = 0.44) and coping effectively with stress related to teaching responsibilities (M = 3.78, SD = 0.42) obtained the lowest means and showed the highest variability among the indicators. These findings suggest that while teachers generally manage pressure well, these areas may present greater challenges. Situations such as overlapping deadlines, classroom observations, and simultaneous teaching and administrative tasks may contribute to increased stress levels, requiring sustained emotional regulation.

Feeling emotionally supported by colleagues (M = 3.80, SD = 0.43) highlights the role of the school environment in promoting well-being. Support from colleagues through collaboration, shared experiences, and informal interactions can help teachers cope with stress. However, the

variability in responses suggests that the level of perceived support may differ depending on school culture, leadership, and interpersonal relationships within the workplace.

Overall, the findings indicate that teachers are able to maintain a high level of emotional well-being despite the demands of the teaching profession. The consistently high ratings across indicators reflect resilience and adaptability; however, the slightly lower means and higher variability in stress-related indicators suggest that emotional demands remain a significant aspect of teachers' work. This underscores the importance of providing sustained support systems within schools.

Further evidence that emotional well-being is experienced in a balanced way across several aspects, such as emotional regulation, stress management, and social support, comes from the comparatively near mean values across markers. However, the observed variability highlights the need for focused interventions to assist teachers sustain and improve their emotional well-being over time, such as stress management programs, wellness initiatives, and professional support mechanisms.

These findings are supported by existing literature on teacher well-being. Collie, Shapka, and Perry (2012) emphasized the importance of supportive school environments in promoting emotional health, while Bakker and Demerouti (2017), through the Job Demands–Resources Model, highlighted how job resources such as collegial support can buffer the negative effects of stress. The present findings align with these perspectives, suggesting that emotional well-being is both an individual and organizational concern that requires continuous support.

Table 20

Perceived Level of Teachers' Well-Being as to Physical Well-Being

Indicators	Mean	SD	VI
1. Sustain the physical energy needed to perform teaching tasks.	3.82	0.42	E
2. Maintain healthy routines that support my work performance.	3.78	0.46	E
3. Experience sufficient rest despite my workload.	3.67	0.57	E
4. Manage physical fatigue caused by extended work hours.	3.68	0.54	E
5. Maintain stamina throughout my teaching schedule.	3.70	0.51	E
Overall	**3.73**	**0.44**	**E**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 20 presents the perceived level of teachers' well-being as to physical well-being among public elementary school teachers. The overall result yielded an excellent level (M = 3.73, SD = 0.44), indicating that teachers are generally able to sustain the physical demands of their profession. However, the relatively higher standard deviation compared to other dimensions suggests greater variability in responses, reflecting differences in how teachers experience physical strain, fatigue, and recovery in their daily work.

This finding suggests that while teachers demonstrate physical resilience, the demands of teaching continue to place considerable strain on their energy and stamina. In public elementary school settings, teachers are required to remain physically active throughout the day—facilitating lessons, managing classroom activities, and attending to learners' needs—while also fulfilling responsibilities beyond instruction, as expected within the system of the Department of Education (Department of Education, 2023).

Sustaining the physical energy needed to perform teaching tasks (M = 3.82, SD = 0.42) obtained the highest mean, indicating that teachers are generally able to meet the immediate

physical demands of classroom instruction. This includes prolonged standing, continuous interaction with learners, and active facilitation of lessons. However, maintaining this level of energy consistently may require significant effort, particularly during consecutive teaching periods or extended school days.

Maintaining healthy routines that support work performance (M = 3.78, SD = 0.46) reflects teachers' efforts to manage basic self-care practices such as regular meals, hydration, and rest. However, the relatively higher variability suggests that these routines are not consistently maintained across all respondents. Time constraints and workload demands may limit opportunities for teachers to prioritize their physical well-being during the workday.

Experiencing sufficient rest despite workload (M = 3.67, SD = 0.57) obtained the lowest mean and showed the highest variability among the indicators, indicating that rest is a key area of concern. This suggests that while teachers continue to function effectively, recovery time may be insufficient. Tasks such as lesson preparation, checking outputs, and completing reports often extend beyond school hours, reducing opportunities for adequate rest and contributing to accumulated fatigue.

Managing physical fatigue caused by extended work hours (M = 3.68, SD = 0.54) further highlights the demands placed on teachers' physical well-being. While teachers demonstrate the ability to cope with fatigue, the relatively high variability suggests that experiences differ depending on workload intensity, schedule, and individual coping mechanisms. Prolonged exposure to such demands may affect overall health if not addressed.

Maintaining stamina throughout the teaching schedule (M = 3.70, SD = 0.51) indicates that teachers are generally able to endure the physical requirements of their daily responsibilities. However, sustaining stamina over time, particularly in the presence of repetitive tasks and limited recovery periods, may present ongoing challenges. This reflects the cumulative nature of physical demands in the teaching profession.

Overall, the findings suggest that teachers demonstrate strong physical endurance and commitment to their roles, as reflected in the consistently excellent ratings. However, the lower means and higher variability in indicators related to rest and fatigue highlight underlying challenges that may affect long-term well-being. These results point to the importance of workload management, adequate rest, and institutional support in sustaining teachers' physical health.

These findings are supported by existing literature on teacher well-being. High workload and time pressure have been associated with increased physical and mental strain among teachers (Skaalvik & Skaalvik, 2018). The Job Demands–Resources Model proposed by Bakker and Demerouti (2017) explains that sustained job demands without adequate recovery may lead to fatigue and reduced well-being. Additionally, Johnson et al. (2005) identified teaching as a physically demanding profession that can impact overall health. The present findings align with these perspectives, suggesting that while teachers demonstrate resilience, maintaining physical well-being requires a balance between work demands and recovery opportunities.

Table 21
Perceived Level of Teachers' Well-Being as to Social Well-Being

Indicators	Mean	SD	VI
1. Build positive and supportive professional relationships with colleagues and school personnel.	3.88	0.33	E
2. Actively collaborate and communicate with members of the	3.87	0.35	E

Indicators	Mean	SD	VI
school community.			
3. Feel a sense of belonging within my workplace.	3.85	0.36	E
4. Maintain respectful and harmonious interactions with students and school stakeholders.	3.91	0.29	E
5. Receive sufficient social support from trusted colleagues.	3.86	0.35	E
Overall	**3.87**	**0.28**	**E**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 21 presents the perceived level of teachers' well-being as to social well-being among public elementary school teachers. The overall result yielded an excellent level (M = 3.87, SD = 0.28), indicating that teachers generally maintain positive relationships, actively collaborate, and experience a sense of belonging within their school environment. The relatively low standard deviation suggests that responses are consistent, reflecting a shared experience of supportive social interactions in the workplace.

This finding suggests that social relationships serve as a strong support system for teachers in public elementary schools. Beyond instructional responsibilities, teachers function within a collaborative environment where interaction with colleagues, learners, and stakeholders is essential. Within the structure guided by the Department of Education (Department of Education, 2023), collaboration and professional engagement are integral to school operations and teacher effectiveness.

Building positive and supportive professional relationships with colleagues and school personnel (M = 3.88, SD = 0.33) reflects the importance of collegial support in managing daily teaching responsibilities. In practice, teachers often share instructional materials, coordinate activities, and provide mutual assistance, particularly during demanding periods such as deadlines and school events. These interactions contribute to a more collaborative and manageable work environment.

Actively collaborating and communicating with members of the school community (M = 3.87, SD = 0.35) further highlights the role of teamwork in school functioning. Teachers participate in meetings, pograms, and coordinated tasks that require continuous communication and cooperation. While such collaboration may add to workload, it also strengthens professional relationships and fosters a sense of unity within the school.

Feeling a sense of belonging within the workplace (M = 3.85, SD = 0.36) indicates that teachers generally feel accepted and valued within their professional environment. This sense of belonging is important in sustaining motivation and engagement. However, the slightly higher variability suggests that experiences may differ depending on school culture, leadership, and interpersonal dynamics among staff.

Maintaining respectful and harmonious interactions with students and school stakeholders (M = 3.91, SD = 0.29) obtained the highest mean, indicating that teachers consistently demonstrate professionalism and positive interpersonal relationships. In classroom and school settings, this includes managing student behavior, communicating with parents, and participating in school activities that require mutual respect and cooperation.

Receiving sufficient social support from trusted colleagues (M = 3.86, SD = 0.35) further emphasizes the role of peer support in promoting well-being. Teachers often rely on colleagues for advice, encouragement, and shared experiences, particularly during stressful periods.

However, the variability in responses suggests that the level of perceived support may not be uniform across all school environments.

Overall, the findings indicate that teachers experience strong social well-being supported by positive relationships and collaborative practices. These social connections serve as important resources in managing the demands of teaching, helping to buffer stress and enhance coping. However, sustaining such support requires a consistent and positive school culture.

These findings are supported by existing literature on teacher well-being. Positive relationships with colleagues and students significantly contribute to teachers' job satisfaction and well-being (Collie, et al., 2012). Hargreaves (2000) emphasized that collegial support and emotional connections are essential in sustaining teacher morale, while Skaalvik and Skaalvik (2018) identified social support as a protective factor against stress and burnout. The present findings align with these perspectives, suggesting that strong social relationships are critical in promoting teachers' overall well-being.

Table 22

Perceived Level of Teachers' Well-Being as to Professional Well-Being

Indicators	Mean	SD	VI
1. Feel fulfilled and purposeful in my role as an educator.	3.90	0.30	E
2. Remain committed to improving my teaching practice.	3.89	0.31	E
3. Feel professionally satisfied with my accomplishments at work.	3.86	0.35	E
4. Engage in continuous professional growth and development.	3.88	0.32	E
5. Maintain enthusiasm for teaching despite challenges.	3.87	0.33	E
Professional Mean	**3.88**	**0.28**	**E**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 22 presents the perceived level of teachers' well-being as to professional well-being among public elementary school teachers. The overall result yielded an excellent level (M = 3.88, SD = 0.28), indicating that teachers generally experience a strong sense of fulfillment, commitment, and satisfaction in their professional roles. The relatively low standard deviation suggests consistent responses among participants, reflecting a shared perception of positive professional engagement in the teaching profession.

This finding suggests that teachers maintain a strong professional identity and sense of purpose despite the demands of their work. In public elementary school settings, teaching is not only viewed as a set of responsibilities but also as a meaningful vocation. Within the framework supported by the Department of Education (Department of Education, 2023), teachers are encouraged to continuously improve their practice while maintaining commitment to learner development and educational goals.

Feeling fulfilled and purposeful in the role as an educator (M = 3.90, SD = 0.30) obtained the highest mean, indicating that teachers derive meaning from their work. This sense of purpose often serves as a motivating factor that sustains teachers even in the presence of large class sizes, diverse learner needs, and multiple responsibilities. It reflects the intrinsic value teachers place on their contribution to student learning and development.

Remaining committed to improving teaching practice (M = 3.89, SD = 0.31) further highlights teachers' dedication to professional growth. In practice, this involves continuous lesson preparation, adjustment of instructional strategies, and responsiveness to feedback from

school leaders and peers. Despite resource limitations and workload demands, teachers demonstrate a consistent effort to enhance instructional effectiveness.

Feeling professionally satisfied with accomplishments at work (M = 3.86, SD = 0.35) indicates that teachers recognize their achievements and progress in their roles. These accomplishments may include improvements in student performance, successful classroom implementation of lessons, or completion of school-related tasks. However, the slightly lower mean suggests that satisfaction may be influenced by external factors such as workload pressure and limited recognition.

Engaging in continuous professional growth and development (M = 3.88, SD = 0.32) reflects teachers' active participation in trainings, seminars, and Learning Action Cell (LAC) sessions. While these opportunities support skill enhancement, they are often undertaken alongside teaching and administrative responsibilities, requiring additional time and effort. This highlights the dual role of professional development as both a resource and an added demand.

Maintaining enthusiasm for teaching despite challenges (M = 3.87, SD = 0.33) further demonstrates teachers' resilience and sustained motivation. In daily practice, teachers manage multiple demands, including instructional, administrative, and ancillary tasks, yet continue to demonstrate dedication to their profession. This sustained enthusiasm plays a critical role in maintaining teaching quality and learner engagement.

Overall, the findings indicate that teachers possess a strong level of professional well-being characterized by purpose, commitment, and continuous growth. The consistently high ratings suggest that teachers are able to maintain a positive professional outlook; however, the presence of workload-related demands highlights the need for sustained institutional support, recognition, and manageable working conditions to preserve this level of well-being over time.

These findings are supported by existing literature on teacher professional well-being. A strong sense of purpose and commitment is central to sustaining teachers' professional identity and effectiveness (Day & Gu, 2009). Hargreaves and Fullan (2012) emphasized that ongoing professional development and collaboration enhance motivation and long-term engagement, while Skaalvik and Skaalvik (2018) found that professional satisfaction is closely linked to overall well-being. The present findings align with these perspectives, suggesting that professional well-being is both an individual and organizational outcome that requires continuous support.

Table 23

Summary of Perceived Level of Teachers' Well-Being

Indicators	Mean	SD	VI
1. Emotional Well-Being	3.81	0.34	Excellent
2. Physical Well-Being	3.73	0.44	Excellent
3. Social Well-Being	3.87	0.28	Excellent
4. Professional Well-Being	3.88	0.28	Excellent
Overall	**3.82**	**0.29**	**Excellent**

Legend: 1.0-1.80 (Poor), 1.81-2.60 (Average), 2.61-3.20 (Good), 3.21-4.00 (Excellent)

Table 23 presents the summary of the perceived level of teachers' well-being across four dimensions: emotional, physical, social, and professional well-being. The overall result yielded an excellent level (M = 3.82, SD = 0.29), indicating that teachers generally maintain a positive and functional state across multiple aspects of their professional and personal lives. The

relatively low standard deviation suggests consistent responses, reflecting a shared experience of well-being among public elementary school teachers.

Taken as a whole, the findings suggest that teachers demonstrate resilience and adaptability in managing the demands of their profession. In public elementary school settings, teachers are required to balance instructional responsibilities, administrative tasks, and ancillary functions within the expectations set by the Department of Education (Department of Education, 2023). Despite these demands, teachers are able to sustain a generally high level of well-being across different domains.

Among the four dimensions, professional well-being obtained the highest mean (M = 3.88, SD = 0.28), indicating that teachers experience a strong sense of purpose, commitment, and satisfaction in their roles. This suggests that intrinsic motivation and professional identity serve as key strengths that support teachers in sustaining their engagement and effectiveness despite workload pressures.

Social well-being (M = 3.87, SD = 0.28) also registered a high level, highlighting the importance of collegial relationships and support systems within the school environment. Collaboration with colleagues, participation in school activities, and positive interactions with stakeholders contribute to a supportive work climate that helps teachers manage daily challenges.

Emotional well-being (M = 3.81, SD = 0.34) reflects teachers' ability to regulate emotions, manage stress, and maintain a positive outlook. While still within the excellent level, the slightly higher variability suggests that emotional experiences may differ depending on workload intensity, classroom conditions, and individual coping strategies. This indicates that emotional demands remain a relevant aspect of teachers' professional lives.

In contrast, physical well-being obtained the lowest mean (M = 3.73, SD = 0.43) and showed the highest variability among the four dimensions. This suggests that physical strain, fatigue, and limited rest are more pronounced concerns. In practice, extended working hours, additional paperwork, and tasks performed beyond school time may reduce opportunities for recovery, contributing to variations in teachers' physical condition.

The pattern of results indicates that while teachers demonstrate strength in professional and social domains, physical demands present a relatively greater challenge. Emotional well-being, while generally stable, also reflects variability that may be influenced by contextual factors. These findings highlight the multidimensional nature of teacher well-being, where strengths in one area do not necessarily eliminate challenges in another.

Overall, the findings suggest that teachers maintain a holistic sense of well-being despite the demands of their profession. While the consistently excellent ratings reflect resilience and adaptability, the variations across dimensions highlight the need for targeted support, particularly in addressing physical strain and workload-related pressures. Sustaining well-being therefore requires both individual coping and institutional support.

These findings are supported by existing literature on teacher well-being. The Job Demands–Resources Model posits that well-being is influenced by the balance between job demands and available resources, where high demands may negatively affect physical and emotional health (Bakker & Demerouti, 2017). The present findings align with these perspectives, suggesting that sustaining teacher well-being requires a balance between professional demands and available support systems.

Part V. Regression Analysis on Factors Affecting Teachers' Workload, 4Cs Learning Skills, and Teachers' Well-Being

Table 24

Regression Analysis of Teachers' Differentiated Instruction Affecting Teachers' Workload in Related Tasks

Model	R	R^2	Adjusted R^2	F	df1	df2	p-value
1	0.772	0.596	0.591	118.606	4	322	< .001

Predictor	B	SE	t	p-value	Beta	Lower	Upper
Intercept	1.162	0.128	9.081	< .001	—	—	—
Process	0.113	0.049	2.313	.021	0.147	0.022	0.272
Product	0.208	0.049	4.243	< .001	0.266	0.143	0.390
Learning Environment	0.371	0.053	7.008	< .001	0.413	0.297	0.529

Legend: *B = Unstandardized Coefficient; SE = Standard Error; β (Beta) = Standardized Coefficient; p < .05 = Significant; p ≥ .05 = Not Significant*

Table 24 presents the regression analysis of teachers' differentiated instruction affecting teachers' workload in teaching-related tasks. The results revealed that the model is statistically significant ($F = 118.606$, $p < .001$), indicating that differentiated instruction significantly predicts teachers' workload. The model explains 59.6% of the variance ($R^2 = 0.596$; Adjusted $R^2 = 0.591$), suggesting strong explanatory power. The high correlation coefficient ($R = 0.772$) further indicates a strong relationship between differentiated instruction and workload.

These findings suggest that the implementation of differentiated instruction is associated with increased demands on teachers' professional tasks. As teachers adapt instruction to meet diverse learner needs, additional effort is required in planning, execution, and monitoring, which contributes to overall workload.

Among the predictors, learning environment emerged as the strongest significant factor ($\beta = 0.413$, $p < .001$). This indicates that creating inclusive and responsive classroom environments substantially contributes to teachers' workload, as it involves preparing varied instructional supports and managing diverse learner needs.

The product component also showed a significant effect ($\beta = 0.266$, $p < .001$), suggesting that designing differentiated outputs and assessment tasks increases workload. Developing varied performance tasks and evaluation strategies requires additional preparation and time for assessment.

Similarly, the process variable was found to have a significant effect ($\beta = 0.147$, $p = .021$). This indicates that modifying instructional strategies, pacing, and learning activities contributes to workload, as these require continuous adjustment and monitoring during instruction.

In contrast, content was found to have no significant effect ($\beta = 0.018$, $p = .757$), suggesting that adjustments in instructional content alone do not significantly increase teachers' workload, possibly due to the availability of existing curriculum materials.

Overall, the findings indicate that while differentiated instruction significantly influences teachers' workload, its impact varies across components. Greater workload demands are associated with learning environment, product, and process, which require active implementation, rather than content modification alone.

These findings are supported by existing literature. Differentiated instruction requires adjustments in process, product, and learning environment, increasing instructional complexity (Tomlinson, 2017). VanTassel-Baska and Stambaugh (2005) emphasized that designing

differentiated tasks demands significant effort, while Bakker and Demerouti (2017) noted that increased job demands contribute to higher workload levels. The findings align with these perspectives, highlighting that the implementation of differentiated instruction contributes to teachers' workload.

Table 25

Regression of Teachers' Differentiated Instruction Significantly Affects Teachers' workload in Ancillary Functions.

Model	R	R^2	Adjusted R^2	F	df1	df2	p-value
1	0.638	0.407	0.400	55.289	4	322	< .001

Predictor	B	SE	t	p-value	Beta	Lower	Upper
Intercept	1.169	0.184	6.356	< .001	—	—	—
Content	0.243	0.067	3.638	< .001	0.262	0.120	0.404
Learning Environment	0.268	0.076	3.522	< .001	0.251	0.111	0.392

Legend: *B = Unstandardized Coefficient; SE = Standard Error; β (Beta) = Standardized Coefficient; p < .05 = Significant; p ≥ .05 = Not Significant*

Table 25 presents the regression analysis of teachers' differentiated instruction affecting teachers' workload in ancillary functions. The results revealed that the model is statistically significant ($F = 55.289$, $p < .001$), indicating that differentiated instruction significantly predicts teachers' ancillary workload. The model explains 40.7% of the variance ($R^2 = 0.407$; Adjusted $R^2 = 0.400$), suggesting a moderate level of explanatory power. The correlation coefficient ($R = 0.638$) further indicates a moderate to strong relationship between differentiated instruction and ancillary workload.

These findings suggest that variations in differentiated instruction practices are associated with changes in teachers' involvement in non-teaching responsibilities, such as meetings, committee work, and school-related activities. However, the influence of differentiated instruction varies across its specific components.

Among the predictors, content was found to have a significant effect ($\beta = 0.262$, $p < .001$), indicating that adjustments in instructional materials and learning content contribute to increased ancillary workload. These adjustments may involve preparing supplementary resources, aligning materials with diverse learner needs, and extending instructional preparation beyond classroom requirements.

Similarly, learning environment showed a significant effect ($\beta = 0.251$, $p < .001$), suggesting that efforts to create inclusive and supportive classroom settings contribute to additional responsibilities. Such efforts may require coordination with colleagues, preparation of classroom structures, and participation in school-wide initiatives that support inclusive education.

In contrast, process ($\beta = 0.069$, $p = .371$) and product ($\beta = 0.127$, $p = .096$) were found to have no significant effect on ancillary workload. This indicates that modifying instructional strategies and designing varied outputs are more closely confined to teaching-related tasks and do not significantly extend into ancillary responsibilities.

Overall, the findings indicate that differentiated instruction has a selective impact on teachers' ancillary workload. Only content and learning environment significantly contribute to

additional responsibilities beyond instruction, while process and product remain primarily within the scope of classroom practice. This highlights that ancillary workload is influenced more by broader instructional preparation and environmental demands than by instructional delivery and assessment processes.

These findings are supported by existing literature. Teachers' workload includes non-teaching responsibilities such as administrative tasks and school activities (OECD, 2019). Skaalvik and Skaalvik (2018) noted that different job demands affect teachers in varying ways depending on their nature, while Tomlinson (2017) emphasized that not all components of differentiated instruction equally extend beyond classroom practice. The present findings align with these perspectives, indicating that only selected aspects of differentiated instruction significantly influence ancillary workload.

A comparison of the regression results indicates that teachers' differentiated instruction has a stronger influence on teaching-related workload than on ancillary workload. This is evident in the higher coefficient of determination for teaching-related tasks ($R^2 = 0.596$) compared to ancillary functions ($R^2 = 0.407$), suggesting that differentiated instruction is more directly associated with instructional responsibilities than with non-teaching duties.

These findings imply that differentiated instruction primarily affects core teaching functions such as lesson planning, instructional delivery, and assessment, which require continuous adaptation to learners' needs. In contrast, ancillary tasks such as meetings, committee work, and school programs are less directly influenced by differentiated practices, as they are shaped more by institutional requirements than by classroom instruction.

Moreover, the pattern of significant predictors differs across the two models. For teaching-related workload, learning environment, product, and process emerged as significant contributors, whereas for ancillary workload, only content and learning environment showed significant effects. This indicates that instructional components involving delivery and assessment are more closely linked to classroom workload, while broader aspects such as content preparation and environmental adjustments may extend into ancillary responsibilities.

Overall, the comparison highlights that differentiated instruction exerts a stronger and more comprehensive impact on instructional workload, while its effect on ancillary workload is moderate and selective. This distinction underscores the multifaceted nature of teachers' workload, where instructional demands are more sensitive to pedagogical approaches. It further suggests that the complexity of classroom implementation, rather than peripheral responsibilities, primarily drives workload increases. As teachers intensify differentiated practices, the need for continuous planning, adaptation, and monitoring becomes more pronounced. Consequently, instructional workload remains the most directly affected domain in the application of differentiated instruction.

Furthermore, the findings emphasize the need to distinguish between pedagogical demands and organizational responsibilities in the teaching profession. While instructional workload is directly shaped by differentiated instruction, ancillary workload is influenced by broader institutional expectations. As a result, teachers often manage both simultaneously, leading to overlapping responsibilities and time constraints. This suggests that while differentiated instruction enhances teaching effectiveness, its indirect contribution to overall workload highlights the importance of supportive measures such as workload distribution, administrative assistance, and collaborative planning. Without such support, the accumulation of tasks may affect teachers' efficiency and overall well-being. It also underscores the need for

aligned policies that balance instructional priorities with administrative requirements. Ensuring this balance is essential in sustaining both teaching quality and teacher productivity.

Table 26

Regression Analysis of Teachers' Differentiated Instruction Affecting the Development of 4Cs Learning Skills

Model	R	R^2	Adjusted R^2	F	df1	df2	p-value
1	0.771	0.594	0.589	117.730	4	322	< .001

Predictor	B	SE	T	p-value	Beta	Lower	Upper
Intercept	0.626	0.152	4.122	< .001	—	—	—
Content	0.215	0.055	3.879	< .001	0.232	0.114	0.349
Process	0.156	0.058	2.687	.008	0.171	0.046	0.297
Product	0.139	0.058	2.399	.017	0.151	0.027	0.275
Learning Environment	0.327	0.063	5.191	< .001	0.307	0.190	0.423

Legend: *B = Unstandardized Coefficient; SE = Standard Error; β (Beta) = Standardized Coefficient; $p < .05$ = Significant; $p \geq .05$ = Not Significant*

Table 26 presents the regression analysis of teachers' differentiated instruction affecting the development of 4Cs learning skills. The results revealed that the model is statistically significant ($F = 117.730$, $p < .001$), indicating that differentiated instruction significantly predicts the development of learners' 4Cs skills. The model explains 59.4% of the variance ($R^2 = 0.594$; Adjusted $R^2 = 0.589$), suggesting strong explanatory power. The correlation coefficient ($R = 0.771$) further indicates a strong relationship between differentiated instruction and 4Cs development.

These findings suggest that the way teachers implement differentiated instruction plays a critical role in enhancing learners' creativity, collaboration, communication, and critical thinking. As instructional practices become more responsive to learner diversity, opportunities for developing 21st-century skills are significantly strengthened.

Among the predictors, learning environment emerged as the strongest significant factor ($\beta = 0.307$, $p < .001$), indicating that creating a supportive, inclusive, and engaging classroom environment greatly contributes to 4Cs development. Such environments promote interaction, participation, and access to varied learning supports that enhance student engagement.

The content variable also showed a significant effect ($\beta = 0.232$, $p < .001$), suggesting that adapting instructional materials and topics to learners' needs facilitates deeper understanding and application of higher-order thinking skills.

Similarly, both process ($\beta = 0.171$, $p = .008$) and product ($\beta = 0.151$, $p = .017$) were found to have significant effects. This indicates that the methods of instruction and the ways learners demonstrate their understanding contribute meaningfully to the development of 4Cs skills. Strategies such as differentiated activities, collaborative tasks, and performance-based outputs support active learning and skill development.

Overall, the findings indicate that all components of differentiated instruction significantly influence the development of 4Cs learning skills, highlighting the importance of a

comprehensive approach that integrates content, process, product, and learning environment. This suggests that effective differentiation not only enhances academic understanding but also promotes essential 21st-century competencies. It further implies that isolated implementation of a single component may not be sufficient to fully develop these skills. Instead, a balanced and integrated application of all elements is necessary to maximize learning outcomes. Consequently, teachers play a critical role in ensuring that differentiated practices are consistently and effectively applied in the classroom.

These findings are supported by existing literature. Differentiated instruction enhances student engagement and promotes deeper learning through varied approaches (Tomlinson, 2017). Trilling and Fadel (2009) emphasized that 4Cs skills are best developed through interactive and learner-centered environments, while Hattie (2009) highlighted the strong impact of effective instructional strategies on student outcomes. The present findings align with these perspectives, confirming that differentiated instruction plays a crucial role in developing learners' 4Cs skills. Moreover, these studies reinforce the idea that teaching strategies must go beyond content delivery to include active learner participation and skill application. This underscores the importance of sustained instructional support and professional development in helping teachers effectively implement differentiated practices. As such, continuous enhancement of teaching competencies remains essential in promoting 4Cs development.

Table 27

Regression Analysis of Teachers' Differentiated Instruction Affecting Teachers' Well-Being

Model	R	R^2	Adjusted R^2	F	df1	df2	p-value
1	0.567	0.321	0.313	38.133	4	322	< .001

Predictor	B	SE	T	p-value	Beta	Lower	Upper
Intercept	1.226	0.216	5.680	< .001	—	—	—
Content	0.301	0.079	3.830	< .001	0.296	0.144	0.447
Process	0.031	0.082	0.377	.706	0.031	-0.131	0.193
Product	0.068	0.083	0.821	.412	0.067	-0.093	0.227
Learning Environment	0.270	0.089	3.018	.003	0.230	0.080	0.381

Legend: *B = Unstandardized Coefficient; SE = Standard Error; β (Beta) = Standardized Coefficient; p < .05 = Significant; p ≥ .05 = Not Significant*

Table 27 presents the regression analysis of teachers' differentiated instruction affecting teachers' well-being. The results revealed that the model is statistically significant ($F = 38.133$, $p < .001$), indicating that differentiated instruction significantly predicts teachers' well-being. The model explains **32.1% of the variance** ($R^2 = 0.321$; Adjusted $R^2 = 0.313$), suggesting a moderate level of explanatory power. The correlation coefficient ($R = 0.567$) further indicates a moderate relationship between differentiated instruction and well-being.

These findings suggest that while differentiated instruction contributes to teachers' well-being, it is not the sole influencing factor. Other variables such as workload demands, institutional support, and working conditions may also play significant roles in shaping overall well-being.

Among the predictors, **content** emerged as the strongest significant factor ($\beta = 0.296$, $p < .001$), indicating that effectively organizing and adapting instructional content contributes

positively to teachers' well-being. When instructional materials are manageable and aligned with learners' needs, teachers may experience a greater sense of control, efficiency, and professional satisfaction.

Similarly, **learning environment** showed a significant effect (β = 0.230, p = .003), suggesting that creating a supportive and well-managed classroom environment enhances teachers' well-being. Positive classroom interactions, learner engagement, and a structured environment can help reduce stress and contribute to a more favorable teaching experience.

In contrast, **process** (β = 0.031, p = .706) and **product** (β = 0.067, p = .412) were found to have no significant effect on teachers' well-being. This indicates that modifying instructional strategies and designing varied outputs are more closely associated with instructional effectiveness and may not directly influence teachers' personal or professional well-being.

Overall, the findings indicate that differentiated instruction has a **moderate and selective impact** on teachers' well-being. Only content and learning environment significantly contribute, suggesting that well-being is more strongly influenced by manageable instructional conditions and supportive environments than by the complexity of teaching strategies.

These findings are supported by existing literature. Teachers' well-being is shaped by the balance between job demands and available resources, particularly supportive environments (Skaalvik & Skaalvik, 2018). Collie, Shapka, and Perry (2012) emphasized that positive classroom and school environments enhance teacher satisfaction and reduce stress, while Bakker and Demerouti (2017) highlighted that well-being is influenced by the interaction between demands and resources. The present findings align with these perspectives, indicating that only selected aspects of differentiated instruction significantly affect teachers' well-being.

Part VI. Mediation Analysis of Teachers' Workload on the Relationship between Differentiated Instruction, 4Cs Learning Skills, and Teachers' Well-Being

Table 28

Teachers' workload in related tasks significantly mediates the relationship between teachers' differentiated instruction and 4Cs Learning Skills

Effect	Estimate	SE	Lower	Upper	Z	p-value	% Mediation
Indirect (a × b)	0.332	0.042	0.249	0.415	7.868	< .001	40.717%
Direct (c)	0.484	0.052	0.382	0.585	9.322	< .001	59.283%
Total (c + a × b)	0.816	0.038	0.742	0.890	21.600	< .001	100%

Path	B	SE	Lower	Upper	Z	p-value
DI → Teaching Related Tasks (a)	0.676	0.033	0.611	0.740	20.656	< .001
Teaching Related Tasks → 4Cs (b)	0.492	0.058	0.379	0.605	8.510	< .001
DI → 4Cs (c)	0.484	0.052	0.382	0.585	9.322	< .001

Legend: B = unstandardized coefficient; SE = standard error, p<.05=significant

Table 28 presents the mediation analysis showing that teachers' workload in related tasks significantly mediates the relationship between teachers' differentiated instruction and the development of 4Cs learning skills. The results revealed that both the indirect and direct effects are statistically significant, confirming the presence of partial mediation. This indicates that the influence of differentiated instruction on 4Cs learning skills operates through both direct instructional practices and indirect mechanisms involving teachers' workload. Such a finding

highlights the complexity of classroom processes, where instructional strategies and teacher-related factors interact to shape student outcomes.

Specifically, the indirect effect (a × b) is statistically significant (Estimate = 0.332, $p < .001$), with a confidence interval ranging from 0.249 to 0.415, which does not include zero. This confirms that teachers' workload in related tasks serves as a meaningful pathway through which differentiated instruction influences the development of 4Cs learning skills. The indirect effect accounts for 40.717% of the total effect, indicating that a substantial portion of the impact of differentiated instruction is transmitted through increased teaching-related responsibilities. In a typical public elementary school setting, this may be observed when teachers design multiple lesson variations, prepare differentiated worksheets, or create tiered activities to accommodate learners with varying abilities. These additional tasks, while increasing workload, also provide more structured and targeted opportunities for learners to engage in creative thinking, collaboration, communication, and problem-solving.

Moreover, the direct effect (c) remains statistically significant (Estimate = 0.484, $p < .001$), contributing 59.283% of the total effect. This suggests that differentiated instruction independently enhances the development of 4Cs learning skills, even without the influence of workload-related processes. In classroom practice, this may be reflected in the use of flexible grouping, open-ended questioning, and learner-centered activities that directly promote interaction and higher-order thinking. The presence of both significant direct and indirect effects confirms that the mediation is partial rather than full, indicating that workload explains only part of the relationship, while differentiated instruction itself remains a primary driver of skill development.

The total effect (c + a × b) is also statistically significant (Estimate = 0.816, $p < .001$), indicating a strong overall influence of differentiated instruction on 4Cs learning skills. This combined effect reflects the synergy between direct instructional strategies and the additional efforts exerted by teachers in implementing them. In actual school contexts, this may be seen when teachers not only apply differentiated strategies during instruction but also extend their efforts beyond classroom time—such as preparing materials at home or coordinating with colleagues—to ensure that learning activities are responsive to diverse learner needs.

Further examination of the path coefficients provides deeper insight into the mediation process. The path from differentiated instruction to teaching-related tasks (a) is significant (B = 0.676, $p < .001$), indicating that increased use of differentiated strategies leads to higher workload. In practice, teachers may need to adjust lesson pacing, prepare varied instructional materials, and monitor learners more closely, all of which require additional time and effort. The path from teaching-related tasks to 4Cs (b) is also significant (B = 0.492, $p < .001$), suggesting that these additional efforts contribute positively to learners' skill development. For instance, frequent formative assessments, guided group activities, and individualized feedback—though time-consuming—help enhance learners' communication, collaboration, and critical thinking skills. The direct path (c) remains significant (B = 0.484, $p < .001$), reinforcing that differentiated instruction continues to influence 4Cs development even without the mediating variable.

These findings imply that teachers' workload in related tasks should not be viewed solely as a burden but also as a functional and enabling mechanism in the teaching-learning process. In many public elementary schools, teachers often extend their working hours to prepare lesson plans, instructional materials, and assessment tools tailored to diverse learners. While this increases workload, it simultaneously enhances the quality of instruction and supports the development of essential 21st-century skills. However, this also raises concerns regarding

sustainability, as prolonged workload without adequate support may eventually affect teachers' well-being.

Overall, the results highlight that the relationship between differentiated instruction and 4Cs learning skills is multifaceted and dynamic, involving both direct instructional effects and indirect workload-related processes. The presence of partial mediation suggests that while workload contributes significantly, other factors such as teacher competence, school support systems, and availability of resources may also play important roles in shaping learning outcomes. This underscores the need for balanced workload distribution and institutional support to ensure that teachers can sustain effective differentiated practices. Moreover, strengthening professional development programs may further enhance teachers' capacity to implement differentiated instruction effectively despite existing demands. In the same way, fostering a supportive school environment can help mitigate workload pressures and promote more consistent development of learners' 4Cs skills.

These findings are supported by existing literature. According to Bakker and Demerouti (2017), job demands such as workload can contribute positively to performance when balanced with adequate resources, supporting the idea of workload as a productive mechanism. Tomlinson (2014) emphasized that differentiated instruction requires additional planning and effort, which enhances student engagement and higher-order thinking skills. Furthermore, Hattie (2009) highlighted that effective instructional practices have both direct and indirect impacts on student achievement. The present findings align with these perspectives, demonstrating that differentiated instruction and workload-related efforts jointly contribute to the development of learners' 4Cs skills.

Table 29

Mediating Effect of Teachers' Related Tasks on the Relationship Between Differentiated Instruction and Teachers' Well-Being

Effect	Estimate	SE	Lower	Upper	Z	p-value	% Mediation
Indirect (a × b)	0.455	0.060	0.336	0.573	7.538	< .001	70.208%
Direct (c)	0.193	0.075	0.047	0.339	2.585	0.010	29.792%
Total	0.648	0.054	0.542	0.753	12.023	< .001	100%

Path	B	SE	Lower	Upper	Z	p-value
DI → Teaching Related Tasks (a)	0.676	0.033	0.611	0.740	20.656	< .001
Teaching Related Tasks → Well-Being (b)	0.673	0.083	0.510	0.836	8.097	< .001
DI → Well-Being (c)	0.193	0.075	0.047	0.339	2.585	0.010

Legend: B = unstandardized coefficient; SE = standard error; p < .05 indicates statistical significance.

Table 29 presents the mediating effect of teachers' workload in related tasks on the relationship between teachers' differentiated instruction and teachers' well-being . The results revealed that the mediation model is statistically significant, with both indirect and direct effects yielding significant values, thereby confirming the presence of partial mediation. This indicates that the relationship between differentiated instruction and teachers' well-being operates through both direct instructional influences and indirect workload-related mechanisms. Such findings highlight the complex interaction between pedagogical practices and teacher-related outcomes.

Specifically, the indirect effect (a × b) is statistically significant (Estimate = 0.455, p < .001), with a confidence interval ranging from 0.336 to 0.573, which does not include zero. This confirms that teachers' workload in related tasks serves as a significant pathway through which differentiated instruction influences teachers' well-being. Notably, the indirect effect accounts for 70.208% of the total effect, indicating that the majority of the impact is transmitted through workload-related processes. In a typical public elementary school setting, this may be observed when teachers engage in extensive lesson planning, preparation of differentiated materials, checking of varied outputs, and continuous monitoring of learners. These additional responsibilities, while necessary for effective instruction, may influence teachers' physical, emotional, and professional well-being due to increased time demands and effort.

On the other hand, the direct effect (c) remains statistically significant (Estimate = 0.193, p = 0.010), accounting for 29.792% of the total effect. This indicates that differentiated instruction still contributes directly to teachers' well-being, independent of workload. In practice, this may be reflected in the sense of fulfillment, professional satisfaction, and motivation that teachers experience when they successfully implement responsive and learner-centered strategies. However, the relatively smaller proportion of the direct effect suggests that this positive influence is less dominant compared to the impact of workload.

The total effect (Estimate = 0.648, p < .001) further confirms that differentiated instruction has an overall significant influence on teachers' well-being. However, the stronger indirect effect compared to the direct effect indicates that workload plays a more dominant role in shaping how differentiated instruction affects teachers. This implies that while differentiated instruction has the potential to enhance well-being, its benefits are largely mediated by the demands it creates in teaching-related tasks.

Further analysis of the path coefficients provides additional support for the mediation model. The path from differentiated instruction to teaching-related tasks (a) is significant (B = 0.676, p < .001), indicating that increased implementation of differentiated instruction leads to higher workload. In real classroom settings, this may involve preparing multiple instructional materials, adjusting lesson pacing, and providing individualized feedback to learners with diverse needs. The path from teaching-related tasks to well-being (b) is also significant (B = 0.673, p < .001), suggesting that workload has a strong influence on teachers' well-being. For example, extended working hours, overlapping deadlines, and continuous classroom demands may affect teachers' physical energy, emotional stability, and overall job satisfaction. The direct path (c) remains significant (B = 0.193, p = 0.010), confirming that differentiated instruction still contributes to well-being beyond the influence of workload.

These findings suggest that teachers' workload in related tasks functions as a critical mediating mechanism in the relationship between differentiated instruction and well-being. In many public elementary schools, teachers often extend their work beyond official hours to meet instructional demands, such as preparing materials at home or completing reports after class. While these efforts support effective teaching, they may also contribute to fatigue and stress if not properly managed. This highlights the dual nature of workload—as both a necessary component of effective instruction and a potential source of strain.

Overall, the results emphasize that managing teachers' workload is essential in sustaining positive well-being outcomes. While differentiated instruction enhances teaching quality, its successful implementation requires additional effort that significantly shapes teachers' experiences. This underscores the need for institutional support, such as administrative

assistance, collaborative planning, and realistic workload distribution, to ensure that teachers can maintain both effectiveness and well-being over time.

The mediation analyses further revealed notable differences in how teachers' workload in related tasks influences the relationship between differentiated instruction and the two outcome variables: 4Cs learning skills and teachers' well-being . These differences highlight the varying roles of workload depending on whether the outcome is student-related or teacher-related.

For 4Cs learning skills, the mediation effect is partial, with the indirect effect accounting for 40.717% and the direct effect accounting for 59.283% of the total effect. This indicates that differentiated instruction primarily influences student outcomes directly, with workload serving as a supporting mechanism. In classroom practice, this may be observed when interactive strategies, group activities, and differentiated tasks directly enhance learners' creativity, collaboration, communication, and critical thinking, even without substantial increases in workload.

In contrast, for teachers' well-being, the mediation effect is also partial, but the pattern is reversed. The indirect effect accounts for a significantly larger proportion (70.208%), while the direct effect contributes only 29.792%. This suggests that differentiated instruction influences teachers' well-being primarily through workload, rather than through direct instructional engagement. In practical terms, while teachers may feel professionally fulfilled by implementing differentiated strategies, the associated workload—such as extended preparation, assessment, and monitoring—plays a more dominant role in shaping their overall well-being.

This comparison indicates that workload plays different functional roles depending on the outcome variable. In the development of 4Cs learning skills, workload acts as a supporting and enabling mechanism that enhances the effectiveness of differentiated instruction. However, in the case of teachers' well-being, workload becomes the primary influencing pathway, significantly shaping teachers' physical, emotional, and professional experiences.

These findings imply that while differentiated instruction is beneficial for both learners and teachers, its implications are not uniform. For students, the benefits are largely direct and instructional in nature. For teachers, however, the impact is more indirect and mediated by the demands associated with implementing such practices. In public school contexts where teachers handle large class sizes and multiple responsibilities, this distinction becomes even more pronounced.

Overall, the results highlight that teachers' workload is more critical in influencing well-being than in shaping student skill development. This underscores the importance of providing adequate institutional support systems, such as reduced administrative burden, shared instructional resources, and collaborative teaching practices. Ensuring such support is essential not only for sustaining teacher well-being but also for maintaining the effectiveness of differentiated instruction in promoting student learning outcomes.

Table 30

Mediating Effect of Teachers' Ancillary Workload on the Relationship between Differentiated Instruction and 4Cs Learning Skills

Effect	Estimate	SE	Lower	Upper	Z	p-value	% Mediation
Indirect (a × b)	0.249	0.032	0.186	0.312	7.722	< .001	30.542%
Direct (c)	0.567	0.044	0.481	0.652	13.021	< .001	69.458%
Total	0.816	0.038	0.742	0.890	21.600	< .001	100%

Path	B	SE	Lower	Upper	Z	p-value
DI → Ancillary Functions (a)	0.673	0.046	0.583	0.762	14.710	< .001
Ancillary Functions→ 4Cs (b)	0.371	0.041	0.290	0.451	9.073	< .001
DI → 4Cs (c)	0.567	0.044	0.481	0.652	13.021	< .001

Note: B = unstandardized coefficient; SE = standard error; p < .05 indicates statistical significance.

Table 30 presents the mediating effect of teachers' ancillary workload on the relationship between differentiated instruction and the development of 4Cs learning skills . The results revealed that the mediation model is statistically significant, with both indirect and direct effects yielding significant values, thereby confirming the presence of partial mediation. This indicates that the influence of differentiated instruction on 4Cs learning skills occurs both directly through instructional practices and indirectly through ancillary workload-related processes.

Specifically, the indirect effect (a × b) is statistically significant (Estimate = 0.249, p < .001), with a confidence interval ranging from 0.186 to 0.312, which does not include zero. This confirms that ancillary workload serves as a meaningful pathway through which differentiated instruction contributes to the development of 4Cs learning skills. However, the indirect effect accounts for only 30.542% of the total effect, suggesting that while ancillary workload plays a role, its contribution is relatively limited. In public elementary school settings, ancillary workload may include tasks such as preparing reports, attending meetings, participating in committees, and organizing school programs. While these tasks may indirectly support instructional planning and coordination, they do not consistently provide direct opportunities for learners to engage in higher-order thinking or collaborative learning experiences.

On the other hand, the direct effect (c) remains statistically significant (Estimate = 0.567, p < .001), accounting for a larger proportion of 69.458% of the total effect. This indicates that differentiated instruction exerts a stronger direct influence on the development of 4Cs learning skills. In actual classroom practice, this may be observed when teachers implement learner-centered strategies such as group work, problem-solving activities, open-ended questioning, and performance-based tasks. These approaches directly engage learners in processes that develop creativity, collaboration, communication, and critical thinking, independent of ancillary responsibilities.

The total effect (Estimate = 0.816, p < .001) further confirms that differentiated instruction has a strong overall influence on 4Cs learning skills. This reflects the combined impact of both direct instructional strategies and indirect contributions from ancillary workload. However, the dominance of the direct effect highlights that classroom-based instructional practices remain the primary driver of student skill development.

Further analysis of the path coefficients supports these findings. The path from differentiated instruction to ancillary workload (a) is significant (B = 0.673, p < .001), indicating that increased implementation of differentiated strategies is associated with higher involvement in ancillary functions. In practice, teachers who actively differentiate instruction may also engage more in documentation, coordination, and reporting tasks related to their instructional activities. The path from ancillary workload to 4Cs (b) is also significant (B = 0.371, p < .001), suggesting that these tasks have some influence on student skill development, possibly by supporting organization, planning, and communication processes within the school. However, compared to teaching-related workload, this influence is less direct and less substantial. The direct path (c)

remains significant (B = 0.567, p < .001), reinforcing that differentiated instruction independently contributes to 4Cs development.

These findings suggest that while ancillary workload contributes to the teaching-learning process, it functions primarily as a supporting mechanism rather than a central driver of student skill development. In many public schools, teachers are required to complete extensive administrative tasks alongside their instructional duties. While these tasks are essential for school operations and accountability, they may limit the time and energy available for high-impact instructional practices if not properly managed.

Overall, the results indicate that ancillary workload plays a secondary and less dominant mediating role in the relationship between differentiated instruction and 4Cs learning skills. This highlights the importance of prioritizing instructional activities that directly engage learners in meaningful learning experiences, while ensuring that ancillary tasks do not detract from teachers' capacity to deliver effective instruction.

The comparison of mediation effects between teaching-related workload and ancillary workload on the relationship between differentiated instruction and 4Cs learning skills reveals important differences in their roles and impact . These differences highlight how various types of teacher workload contribute differently to student outcomes.

For teaching-related workload, the indirect effect accounts for 40.717%, indicating a relatively stronger mediating role. This suggests that tasks directly associated with instruction—such as lesson planning, classroom facilitation, and assessment—significantly enhance the effectiveness of differentiated instruction in developing 4Cs skills. In classroom settings, these tasks provide direct opportunities for learners to engage in collaborative activities, critical thinking exercises, and creative outputs, thereby strengthening skill development.

In contrast, ancillary workload accounts for only 30.542% of the mediation effect, indicating a weaker role. This suggests that while ancillary tasks contribute to the overall functioning of the school, their influence on 4Cs learning skills is more indirect. Tasks such as attending meetings, completing reports, and participating in committees may support organizational efficiency, but they do not directly engage learners in skill-building activities.

Additionally, the direct effect of differentiated instruction on 4Cs learning skills is higher in the case of ancillary workload (69.458%) compared to teaching-related workload (59.283%). This indicates that when ancillary workload is considered, the influence of differentiated instruction remains largely direct, further emphasizing that student skill development is primarily driven by classroom instruction rather than external responsibilities.

This comparison suggests that not all forms of teacher workload contribute equally to student learning outcomes. Teaching-related workload plays a more substantial and meaningful role, as it is closely aligned with instructional processes that directly influence learner engagement and skill acquisition. In contrast, ancillary workload serves a more peripheral function, supporting the broader educational system but contributing less directly to learning outcomes.

In practical terms, this means that in public elementary school settings, activities such as differentiated lesson planning, interactive teaching strategies, and formative assessment practices are more effective in developing 4Cs skills than administrative and organizational tasks. While ancillary responsibilities are necessary, excessive involvement in such tasks may reduce the time available for high-impact instructional practices.

Moreover, these findings highlight the importance of strategic workload management. Schools must ensure that teachers are provided with sufficient time and support to focus on

instructional tasks that directly enhance student learning. This may include reducing administrative burden, providing shared instructional resources, and promoting collaborative planning among teachers. By doing so, schools can maximize the benefits of differentiated instruction while minimizing the potential negative effects of excessive workload.

Overall, the results emphasize that instruction-related workload is more critical than ancillary workload in promoting 4Cs learning skills, underscoring the need to prioritize teaching and learning processes in educational practice and policy.

Table 31

Mediation Analysis of Teachers' Ancillary Workload on the Relationship between Differentiated Instruction and Teachers' Well-Being

Effect	Estimate	SE	Lower	Upper	Z	p-value	% Mediation
Indirect (a × b)	0.459	0.047	0.366	0.552	9.682	< .001	70.906%
Direct (c)	0.188	0.057	0.078	0.299	3.330	< .001	29.094%
Total	0.648	0.054	0.542	0.753	12.023	< .001	100%

Path	B	SE	Lower	Upper	Z	p-value
DI → Ancillary Functions (a)	0.673	0.046	0.583	0.762	14.710	< .001
Ancillary Functions → Well-Being (b)	0.683	0.053	0.579	0.787	12.859	< .001
DI → Well-Being (c)	0.188	0.057	0.078	0.299	3.330	< .001

Legend: *B = unstandardized coefficient; SE = standard error; p < .05 indicates statistical significance.*

Table 31 presents the mediation analysis of teachers' ancillary workload on the relationship between differentiated instruction and teachers' well-being . The results reveal that the model is statistically significant, with both indirect and direct effects reaching significance, thereby confirming the presence of partial mediation. This indicates that differentiated instruction influences teachers' well-being both directly and indirectly through ancillary workload. Such findings point to a complex interaction where instructional practices are closely intertwined with organizational demands in shaping teachers' overall well-being.

Specifically, the indirect effect (a × b) is statistically significant (Estimate = 0.459, p < .001), with a confidence interval ranging from 0.366 to 0.552, which does not include zero. This confirms that ancillary workload serves as a strong mediating pathway. Notably, the indirect effect accounts for 70.906% of the total effect, indicating that the majority of the influence of differentiated instruction on teachers' well-being is transmitted through ancillary responsibilities. In a typical public elementary school setting, this may involve tasks such as preparation of reports (e.g., SF forms), participation in meetings, compliance with documentation requirements, and involvement in committees or school programs. These responsibilities often extend beyond classroom instruction and consume time that could otherwise be allocated for rest or instructional preparation, thereby influencing teachers' physical and emotional well-being.

On the other hand, the direct effect (c) remains statistically significant (Estimate = 0.188, p < .001), but contributes only 29.094% of the total effect. This suggests that while differentiated instruction can directly enhance teachers' sense of fulfillment, motivation, and professional satisfaction, its influence is comparatively limited when workload is considered. For instance, teachers may feel professionally rewarded when they successfully implement differentiated

strategies and observe improved student engagement; however, these positive experiences may be offset by the additional workload required to sustain such practices.

The total effect (Estimate = 0.648, $p < .001$) further confirms that differentiated instruction has an overall significant influence on teachers' well-being. However, the dominance of the indirect effect over the direct effect indicates that workload is the primary mechanism through which this relationship operates. This suggests that the impact of differentiated instruction on well-being is largely dependent on how it translates into additional responsibilities, particularly those beyond direct teaching.

Further analysis of the path coefficients strengthens this interpretation. The path from differentiated instruction to ancillary workload (a) is significant (B = 0.673, $p < .001$), indicating that greater use of differentiated strategies is associated with increased involvement in ancillary functions. In practice, teachers implementing differentiated instruction may need to document interventions, coordinate with colleagues, and prepare additional reports aligned with learner needs. The path from ancillary workload to well-being (b) is also highly significant (B = 0.683, $p < .001$), suggesting that these responsibilities strongly influence teachers' well-being. For example, prolonged engagement in administrative and organizational tasks may lead to fatigue, reduced recovery time, and increased stress. The direct path (c) remains significant (B = 0.188, $p < .001$), confirming partial mediation.

These findings indicate that ancillary workload functions as a dominant mediating mechanism in the relationship between differentiated instruction and teachers' well-being. While differentiated instruction enhances teaching effectiveness, the additional non-instructional demands it generates play a critical role in shaping how teachers experience their work. In many public school contexts, teachers often manage both instructional and administrative responsibilities simultaneously, leading to overlapping tasks and extended working hours.

Overall, the results emphasize that managing ancillary workload is essential for sustaining teachers' well-being. While differentiated instruction is beneficial for both teaching quality and student outcomes, its implementation must be supported by institutional mechanisms such as reduced administrative burden, streamlined reporting systems, and collaborative task distribution. Without such support, the cumulative demands of ancillary workload may outweigh the positive effects of instructional practices on teachers' well-being.

The comparison of mediation effects reveals significant differences in how teachers' workload—both teaching-related tasks and ancillary workload—influences the outcomes of 4Cs learning skills and teachers' well-being . These differences highlight the varying roles of workload depending on whether the outcome is learner-centered or teacher-centered.

For 4Cs learning skills, the mediating role of workload is moderate. Teaching-related workload accounts for 40.717%, while ancillary workload contributes 30.542% mediation. In both cases, the direct effects remain stronger (59.283% and 69.458%, respectively), indicating that differentiated instruction primarily enhances learners' 4Cs skills through direct classroom practices. In actual classroom settings, strategies such as collaborative learning, differentiated tasks, and performance-based assessments directly engage learners in skill development, while workload serves only as a supporting mechanism.

In contrast, for teachers' well-being, workload demonstrates a dominant mediating role. Teaching-related workload accounts for 70.208%, while ancillary workload contributes 70.906% mediation. In these models, the indirect effects exceed the direct effects, indicating that differentiated instruction influences teachers' well-being primarily through workload rather than through direct instructional engagement. This means that while teachers may derive satisfaction

from teaching, their overall well-being is more strongly shaped by the demands associated with their responsibilities.

This comparison suggests that workload operates differently depending on the outcome variable. In student outcomes, workload acts as a facilitator of effective instruction, enhancing the impact of differentiated strategies. However, in teacher outcomes, workload becomes a primary determinant, significantly shaping teachers' physical, emotional, and professional conditions. In public elementary school settings, where teachers often handle large class sizes and multiple administrative responsibilities, this distinction becomes more evident.

Furthermore, the findings imply that not all types of workload contribute equally to educational outcomes. Teaching-related workload, which is directly linked to instruction, plays a more meaningful role in supporting student learning. In contrast, ancillary workload, while necessary for school operations, contributes less directly to learning outcomes but has a stronger influence on teacher well-being.

In summary, workload plays a more critical and dominant mediating role in teachers' well-being than in 4Cs learning skills. This underscores the importance of implementing institutional support systems that balance instructional demands with manageable workload. Strategies such as administrative support, reduced paperwork, and collaborative planning can help ensure that teachers are able to sustain both effective teaching practices and positive well-being.

2. Recommendations

From the conclusions drawn in the study, several recommendations were proposed for possible implementation. School administrators may be encouraged to reduce excessive teacher workload, particularly ancillary functions such as documentation, reporting, and other non-teaching responsibilities, by providing administrative support, streamlined systems, and adequate planning time that will allow teachers to focus more on differentiated instruction practices. Teachers may also be encouraged to implement efficient and strategic differentiated instruction through flexible grouping, reusable instructional materials, and learner-centered approaches in order to maintain instructional quality while managing workload demands. In addition, the Department of Education and policymakers may develop programs and policies that balance instructional expectations with teachers' workload by ensuring sufficient resources, proper time allocation, and reduced administrative burden. Professional development providers may likewise offer training programs that emphasize both differentiated instruction and workload management strategies to promote sustainable teaching practices without increasing stress or burnout. Furthermore, schools and educational institutions may foster supportive and collaborative environments through shared planning time, peer collaboration, and improved access to instructional resources, particularly in strengthening the learning environment that greatly influences both teacher well-being and student outcomes. Lastly, future researchers may explore additional variables such as teacher resilience, organizational support, leadership practices, and time management, while also utilizing mixed-methods or longitudinal research designs to further examine the long-term effects of differentiated instruction and workload on teachers and learners.

References

Abdullah, N., & Hashim, R. (2021). Differentiated instruction strategies in diverse classrooms. *International Journal of Instruction, 14*(2), 123–138.

Abdullah, N. H., & Hashim, H. (2021). Differentiated instruction practices and learner engagement in diverse classrooms. *Asia-Pacific Education Review.*

Alexander, R. (2017). *Towards dialogic teaching: Rethinking classroom talk* (5th ed.). Dialogos.

Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives.* Longman.

Bakker, A. B., & Demerouti, E. (2014). Job demands–resources theory. *Journal of Organizational Behavior, 31*(2), 274–286.

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273–285.

Balagtas, M. (2018). Differentiated instruction in Philippine classrooms: Effects on student achievement. *Philippine Journal of Education, 97*(1), 45–60.

Ballet, K., & Kelchtermans, G. (2009). Struggling with workload: Teachers' vulnerability. *Teaching and Teacher Education, 25*(8), 1150–1157.

Beghetto, R. A., & Kaufman, J. C. (2014). Classroom contexts for creativity. *High Ability Studies, 25*(1), 53–69.

Bellanca, J., & Brandt, R. (2010). *21st century skills: Rethinking how students learn.* Solution Tree Press.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education, 5*(1), 7–74.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school.* National Academy Press.

Brighton, C. M., Hertberg, H. L., Moon, T. R., Tomlinson, C. A., & Callahan, C. M. (2005). The feasibility of high-end learning in a diverse middle school. *Journal for the Education of the Gifted, 29*(1), 69–104.

Chan, W. (2019). Differentiated instruction in Asian classrooms: Impacts on engagement and learning. *Asian Education Review, 10*(2), 85–102.

Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and teacher well-being. *Teaching and Teacher Education, 28*(8), 1189–1199.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches.* SAGE Publications.

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development.* Learning Policy Institute.

David, C. C., Albert, J. R. G., & Vizmanos, J. F. V. (2019). *Pressures on public school teachers and implications for quality education.* Philippine Institute for Development Studies.

Day, C. (2017). *Teachers' worlds and work: Understanding complexity, building quality.* Routledge.

Department of Education. (2015). *Policy guidelines on classroom assessment.* DepEd.

Department of Education. (2015). *Policy guidelines on classroom assessment for the K to 12 basic education program (DO 8, s. 2015).*

Department of Education. (2016). *K to 12 curriculum guide.*

Department of Education. (2016). *Learning Action Cell.* DepEd.

Department of Education. (2020). *Basic education report.* DepEd.

Department of Education. (2024). *Updated guidelines on learner-centered instruction.*

EDCOM II. (2023). *Second Congressional Commission on Education report.*

Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction.* American Philosophical Association.

Fullan, M. (2016). *The new meaning of educational change* (5th ed.). Teachers College Press.

Gay, G. (2010). *Culturally responsive teaching: Theory, research, and practice* (2nd ed.). Teachers College Press.

Gillies, R. M. (2016). Cooperative learning: Review of research and practice. *Australian Journal of Teacher Education, 41*(3), 39–54.

Guskey, T. R. (2002). Professional development and teacher change. *Teachers and Teaching, 8*(3), 381–391.

Hargreaves, A. (2018). *Professional capital and teacher development.* Teachers College Press.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement.* Routledge.

Heacox, D. (2012). *Differentiating instruction in the regular classroom.* Free Spirit Publishing.

Heritage, M. (2010). *Formative assessment: Making it happen in the classroom.* Corwin Press.

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom. *Review of Educational Research, 79*(1), 491–525.

Jerrim, J. (2019). Teachers' workload and stress in OECD countries. *Educational Review, 71*(1), 1–27.

Johnson, D. W., & Johnson, R. T. (2009). An educational psychology success story: Social interdependence theory. *Educational Researcher, 38*(5), 365–379.

Laguador, J. M. (2021). Teaching challenges and workload of Filipino educators. *Asia Pacific Journal of Education, 41*(2), 200–215.

Marzano, R. J. (2007). *The art and science of teaching.* ASCD.

McTighe, J., & Brown, J. L. (2005). Differentiated instruction and educational standards. *Phi Delta Kappan, 86*(3), 234–238.

Mercer, N., & Howe, C. (2012). Explaining the dialogic processes of teaching and learning. *Learning, Culture and Social Interaction, 1*(1), 12–21.

Organisation for Economic Co-operation and Development. (2020). *TALIS 2018 results (Volume II): Teachers and school leaders as valued professionals.* OECD Publishing.

Partnership for 21st Century Learning. (2019). *Framework for 21st century learning.*

Prast, E. J., Van de Weijer-Bergsma, E., Miočević, M., Kroesbergen, E. H., & Van Luit, J. E. H. (2018). Differentiated instruction in primary education. *Learning and Instruction, 54*, 45–54.

Prudente, M. S. (2020). Teachers' workload and instructional practices in Philippine public schools. *Philippine Social Science Journal, 3*(2), 45–56.

Robinson, K. (2011). *Out of our minds: Learning to be creative.* Capstone.

Rose, D. H., & Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning.* ASCD.

Sawyer, R. K. (2012). *Explaining creativity: The science of human innovation* (2nd ed.). Oxford University Press.

Skaalvik, E. M., & Skaalvik, S. (2018). Job demands and teacher well-being. *Social Psychology of Education, 21*(5), 1251–1275.

Sousa, D. A., & Tomlinson, C. A. (2018). *Differentiation and the brain.* ASCD.

Strickland, D. (2007). Differentiated instruction strategies.

Subban, P. (2006). Differentiated instruction: A research basis. *International Education Journal, 7*(7), 935–947.

Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners* (2nd ed.). ASCD.

Tomlinson, C. A. (2017). *How to differentiate instruction.* ASCD.

Trilling, B., & Fadel, C. (2009). *21st century skills.* Jossey-Bass.

Tuazon, A. P. (2018). Differentiated instruction and student engagement. *Philippine Journal of Education, 96*(1), 12–25.

UNESCO. (2015). *Rethinking education: Towards a global common good?*

VanTassel-Baska, J., & Stambaugh, T. (2005). Challenges and possibilities in differentiated instruction. *Gifted Child Quarterly, 49*(2), 157–167.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Harvard University Press.

Wiggins, G., & McTighe, J. (2012). *Understanding by design* (Expanded 2nd ed.). ASCD.

Wiliam, D. (2011). *Embedded formative assessment.* Solution Tree Press.