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Integrating The 4c's: A Comprehensive Approach To Instructional Design For Holistic Learning

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Abstract :   The integration of the 4Cs—Context, Connection, Collaboration, and Creativity—into the instructional design of Grade 5 English teachers is crucial in addressing the growing demand for educators to embrace 21st-century teaching strategies. The main objective of this study is to evaluate how effectively these teachers incorporate the 4Cs into their teaching practices, identify challenges faced, and assess any relationships between demographic factors and the integration of these elements. Using a descriptive correlational research design, data were gathered through surveys distributed to 18 Grade 5 English teachers in the district. The study analyzed the teachers' profiles, the level of integration of the 4Cs, and the difficulties encountered in implementing them. Salient findings reveal that teachers highly integrate the 4Cs in their teaching, with strength in fostering connections and creativity. However, they face challenges in aligning instructional goals with diverse cultural backgrounds, sourcing relevant real-world scenarios, and integrating technology in an accessible way. Notably, demographic factors like age, sex, and experience did not significantly influence the level of integration. Based on these findings, the study recommends targeted professional development, cultural sensitivity workshops, and improved access to technology to enhance the integration of the 4Cs, ensuring that all teachers can deliver a more holistic learning experience.

IndexTerms - Integration, context, connection, collaboration, creativity, comprehensive, approach, instructional design, holistic learning

I. INTRODUCTION

1.1 Rationale

An instructional design's sense of completion and harmony is one of the things that makes it appealing. It does not feel like a combination of different components that happened to come together when the instructional design was experienced. Quite the contrary, it fits together. It probably never even stops to think about the specific elements that make up the instructional design (McDonald, 2024).

The process of strategically creating a curriculum that supports the intended outcome and evaluating learning objectives is known as instructional design or ID. Engaging students with the material fosters innovative methods of thinking (SNU, 2023). The goal of instructional design is to enable individuals to learn, or to put it another way, to realize a particular potential of theirs. Furthermore, this is accomplished by means of more than only instructional techniques and curriculum (McDonald, 2024).

In holistic learning, teachers assist students in their journey toward self-actualization and self-discovery by acting as facilitators. They promote empathy, compassion, mindfulness, and critical thinking in addition to creativity and problem-solving abilities. This approach acknowledges that education encompasses not just the acquisition of knowledge but also the development of life skills, emotional intelligence, and a feeling of social responsibility (Aqua, 2023).

Putting students at the center of their education and emphasizing the right methods and ways of thinking for them to build their knowledge and learning paths in the 21st-century educational system is one trend in the quality of teaching that aims to improve student learning (Jaiswal & Al-Hattami, 2020).

In this growing age of varying education streams, it is extremely important to develop students who can adapt and excel in today's ever-changing educational system. Mainstream pedagogical strategies no longer provide growing learners with the skills they need to succeed in a complex, interconnected world. The 4C design has been noted as a suitable approach to overcome these deficits in instructional designs (Pardede, 2020).

To solve this, several educational reforms have been made, such as the launching of the MATATAG Curriculum in the Philippines, which advocates critical and creative thinking. Just the same, studies indicate that although reforms have occurred, holistic teaching approaches such as the 4Cs are not completely integrated (Alcantara & Bautista, 2023).

The modern educational system is built upon the 4Cs, which offer proficiency and competency. For the educational system to provide 21st-century quality instruction, Chiruguru (2020) states that technological literacy and information that goes beyond what was previously known or sufficient to address the issues associated with the curriculum are necessary. As a result, it makes recommendations and puts forth the learning model for the efficient integration of the 4Cs to promote high-quality instruction in the educational system for holistic learning. To educate the next generation for individual success, innovative teaching methods are required (Mallillin et al., 2021).

Additionally, Ambarsiwi & Priyana (2020) predict that educators will adapt to the trends of the twenty-first-century educational system by using technology and innovation to help students acquire the 4Cs and by improving the efficacy of their knowledge and learning strategies.

In order to support the quality of education in the twenty-first century, the educational system must innovate and integrate the 4Cs. To this end, learning models that will improve the integration of technology to support instructional materials and design are being developed and designed Agaoglu, & Demir, (2020).

The Matatag Curriculum is a novel approach to instructional design that places a strong emphasis on the four essential elements—context, connection, creativity, and collaboration—of instructional design. According to DepEd (2023), the 4Cs are essential components of instructional design that influence the preparation, execution, and evaluation of the teaching and learning process.

Context is the setting or environment that affects how students interpret the material. Context improves learners' motivation to actively engage in learning activities by connecting instructional materials to learners' everyday experiences. Fostering comprehension and the growth of transferable knowledge are aspects of connection. It states that its goal is for students to have solid, adaptable knowledge that they may use to solve new issues and situations (The 4Cs of Matatag Curriculum, 2023)

The cooperative method of collaboration is how students cooperate to accomplish a common objective. It equips pupils for lifetime social engagement by recognizing their unique skills and holding them equally responsible for results or knowledge sharing. Through the application of imagination and critical thinking, creativity enables students to produce meaningful learning expressions. It encourages the development of fresh concepts and the conversion of current solutions into more creative and long-lasting ones (DepEd, 2023).

A study that was conducted found that there was a high degree of observable 4C integration with learning activities. Furthermore, the teacher responders were unanimous in their agreement that incorporating the 4Cs into instructional design is very advantageous for both teachers and students, leading to more engaging classroom participation. To make teaching and learning more relevant, engaging, and rigorous and to prepare students for the workplace and life of the twenty-first century, teachers should consistently include and embed the four Cs into their instructional designs. Students should also be aware of the skills that can be learned (Madrid, 2021).

Nevertheless, while they frequently understand how important it is to modify classes to fit the unique context of each student, teachers rarely incorporate this understanding into the instructional design process. Teachers frequently struggle with contextualizing learning, especially when they are working with pupils from different socioeconomic backgrounds (Thornhill-Mille et al., 2023).

Moreover, Williams & Charles-Ogan's study, which Stanikzai (2023) mentioned, revealed that although teachers clearly exhibit connection and collaboration, they integrate information and creativity into their courses at a low level. To make learning more relevant for today's pupils, a key proposal was that teachers should embrace and incorporate creativity and content into their teaching.

However, according to a survey, educators thought their level of creativity integration in instructional design was moderate. When it came to teaching, teachers were labeled as unlikely creatives. The difference emerged from the instructors' perceptions of their creativity, which ranged from moderate to nonexistent when it came to their fit as creative educators. Educators should strive to enhance their inventiveness to steer clear of repetitive teaching methods (Adhiwiguna et al., 2023).

Research indicates that there is no statistically significant correlation between the gender profile of teachers and their duration of service when it comes to incorporating the 4Cs into their lessons (Kuloğlu & Karabekmez, 2022).

According to Waigera et al. (2020), there was a statistically significant linear link between the integration of context in teachers' instruction and factors such as gender, educational attainment, and professional training status. According to these findings, teachers who were more educated and highly trained than their less experienced counterparts were more likely to employ instructional materials, as did female teachers relative to their male counterparts. However, there was no discernible correlation between the integration of context and age, marital status, or length of teaching experience. It was determined that effective teaching and learning at the basic level depend heavily on the professional development of school instructors. It was suggested that educators support their students' use of instructional resources to provide them with interactive and hands-on learning opportunities.

Based on the reference, it is shown that age, length of service, and number of training have a significant relation to integration collaboration in teachers' instruction. Veteran teachers with more experience were also less likely to support coordinated and collaborative relationships than younger/newer teachers. A reason for this openness may be that newer teachers are more accustomed to contemporary instructional models since such teaching methods have become more prevalent in their training. Also, the quantity of professional development and related training is just as important in integrating collaborative instruction. It was reported that teachers uphold outlets, workshops, and seminars on collaborative teaching skills and carry out these skills most efficiently in the classroom (Adewale, 2024).

According to AITSL (2020), some studies show that male teachers might integrate collaborative teaching practices less than their female counterparts. However, the reasons for this can vary and depend on cultural and institutional factors (AITSL, 2021).

According to a study, the degree to which teachers incorporate creativity into their lessons depends significantly on factors including gender, age, experience as a teacher, and educational background (Pazin et al., 2022). Male teachers were more innovative in their instruction than female teachers (Mahmoud Alali, 2020). Nonetheless, Amzaleg & Masry-Herzallah's (2021) research findings noted that female educators frequently employ unique teaching methods. Teachers with a master's degree or above outperform those with a bachelor's degree or less (Xiong et al., 2020).

Along the way, teachers may face challenges when integrating 4C skills into their classrooms. Yet teachers already are limited in the time they can spend, with curricula full, demands for standardized testing, and not nearly enough hours to teach everything their students need to succeed. Lack of access to relevant resources, materials, and tools that support 4cs integration in lessons may also be a problem faced by teachers. This means availability to technology, co-working spaces, and industry courses. Promoting collaboration and creativity in the classroom demands a transformation of conventional styles. Many teachers may have little professional development or training in how to infuse 4C skills into their teaching practice effectively. Teachers are unlikely to be able effectively to use new strategies or meet the varied learning needs of their students without prior knowledge and skills (Herlinawati et al., 2024).

The setting of the research is the Philippine educational system, which experienced immense reforms to synchronize with global standards. Although these are ways to integrate the 4C's in our curriculum, implementing them into instructional design could still be a challenge to promote holistic learning.

This study aimed to determine the perceived level of integration of 4Cs in the instructional design of Grade 5 English teachers of Bolinao District Cluster II. This study can assist in the development of instructional design from a more comprehensive approach to foster richer and more effective learning experiences for Filipino students.

Furthermore, this study has significant policy implications for the Philippine Department of Education (DepEd). These results can help to shape future curriculum standards, teacher training programs, and assessment strategies that focus on teaching the 4C's. Moreover, the 4C's concepts help students solve problems, communicate well verbally, cooperate with others harmoniously, and think innovatively. Additionally, teachers will be provided with tools for instructional strategies to engage students better and foster deeper learning. General implications for the Philippine educational system are found in this study that would augment learner-natural inclination theoretical understanding of instruction.

1.2 Theoretical framework

For this study, three relevant theoretical frameworks underpin the study, emphasizing innovative instructional design and holistic learning.

Constructivist Learning Theory. Constructivism posits that learners construct knowledge through active engagement with their environment and prior experiences. This theory, pioneered by Piaget (1964) and expanded by Vygotsky (1978), highlights the significance of social interactions and contextual learning in shaping understanding. Applying constructivist principles to instructional design, the integration of the 4C's fosters an environment where students actively participate in learning by connecting lessons to real-world contexts (context), collaborating with peers (collaboration), and engaging in creative problem-solving (creativity). This alignment ensures that learning is not a passive absorption of facts but a dynamic process of exploration and construction (Miller & Cunningham, 2018).

Experiential Learning Theory (ELT). David Kolb's Experiential Learning Theory emphasizes learning through experience, advocating for a cycle of concrete experiences, reflective observation, abstract conceptualization, and active experimentation. This theory aligns seamlessly with the 4C's framework, as it underscores the importance of real-world application and reflective practice. For instance, by embedding "context" into lesson plans, teachers provide students with tangible experiences that resonate with their daily lives. Similarly, collaboration enables students to learn from diverse perspectives, while creativity allows them to explore innovative solutions (Kolb, 2015). The ELT framework supports the thesis's goal of holistic learning by ensuring that students internalize knowledge through meaningful and relevant experiences.

Collaborative Learning Theory. Collaborative Learning Theory, grounded in the works of Vygotsky (1978) and later refined by researchers like Dillenbourg (1999), emphasizes the collective construction of knowledge. It advocates for structured group activities where learners engage in shared tasks to develop a deeper understanding of concepts. This framework aligns with the "collaboration" and "connection" components of the 4C's, encouraging interaction and cooperation among students. For Grade 5 English teachers, incorporating collaborative strategies ensures that students not only learn language skills but also develop critical interpersonal competencies, such as communication, teamwork, and mutual respect (Laal & Ghodsi, 2012). Moreover, collaboration fosters a sense of community, which is essential for holistic education.

1.3 Conceptual Framework

The conceptual framework of this study is designed to illustrate the relationships between the variables that underpin the integration of the 4C's—context, connection, collaboration, and creativity—into instructional design for holistic learning among Grade 5 English teachers in Bolinao District Cluster II. This framework visually represents how the respondents' profiles influence their ability to adopt and implement the 4C's in their teaching practices, while also addressing the challenges they face in the process.

The independent variable is the profile of the respondents, which encompasses critical demographic and professional factors such as age, sex, civil status, highest educational attainment, length of service, position, and the number of relevant trainings attended. These elements are pivotal in shaping teachers' instructional design capabilities. For instance, a teacher's length of service may reflect their experience in handling diverse learners, while the number of relevant trainings attended highlights their exposure to innovative teaching strategies. Together, these factors provide a comprehensive view of the respondents' readiness and potential to integrate the 4C's into their teaching approach.

The dependent variable is the implementation of the 4C's in instructional design for holistic learning. Each element of the 4C's plays a significant role in ensuring that learning goes beyond the acquisition of academic skills to encompass a more dynamic and holistic development process. Context connects learning to real-world applications, making it relevant to students' lives. Connection fosters meaningful links between knowledge and practice. Collaboration emphasizes teamwork and shared learning experiences, while creativity encourages innovation and problem-solving. The effective integration of these components is critical in achieving holistic learning outcomes for students.

Finally, the framework also considers the difficulties encountered by Grade 5 teachers in implementing the 4C's. These challenges are influenced by both the respondents' profiles and the complex demands of integrating modern instructional approaches. Identifying and addressing these difficulties is essential to supporting teachers in creating an engaging and effective learning environment for their students.

This paradigm encapsulates the intricate dynamics between teacher characteristics, instructional strategies, and challenges in achieving the desired educational outcomes. By focusing on these variables, the study provides a structured pathway for understanding how the 4C's can be effectively incorporated into instructional design, thereby fostering a holistic learning experience for students.

1.4 Statement of the Problem

This study aimed to determine the perceived level of integration of 4Cs in the instructional design of Grade 5 English teachers of Bolinao District Cluster II. Specifically, it sought to answer the following questions:

1. What is the profile of the respondents in terms of:
   1.1 Age;
   1.2 Sex;
   1.3 Marital Status;
   1.4 Length of Service;
   1.5 Position; and
   1.6 Number of Relevant Training and Seminars?
2. What is the perceived level of integration of the 4Cs in the instructional design of the respondents in terms of:
   2.1 Context;
   2.2 Connection;
   2.3 Collaboration; and
   2.4 Creativity?
3. Is there a significant relationship between the integration of the 4Cs in the instructional design and the profile of respondents?
4. What are the difficulties encountered by teachers in integrating the 4Cs in instructional design?
5. What plan can be proposed based on the findings of the study?

1.5 Null Hypothesis

In line with the sub-problems, this study tested the hypothesis in its null form at alpha level 0.05. There is no significant relationship between the integration of the 4Cs in the instructional design and the profile of respondents

1.6 Scope and Delimitation of the Study

This study focuses on evaluating the integration of the 4C's—context, connection, collaboration, and creativity—into the instructional design practices of Grade 5 English teachers in Bolinao District Cluster II. Conducted during the summer of 2024 up to the first semester of the 2024-2025 school year, the research primarily aims to assess the perceived level of implementation of these instructional components and identify the factors that influence their integration.

The scope of the study is defined by its target respondents and key areas of inquiry. The participants are limited to Grade 5 English teachers in Bolinao District Cluster II, ensuring a focused examination of a specific teaching group within a localized educational context. The study investigates the teachers' demographic and professional profiles, including age, sex, marital status, length of service, position, and participation in relevant training and seminars. These variables provide insight into the factors that may influence the respondents' instructional approaches.

Moreover, the study evaluates the extent to which the 4C's are integrated into instructional design by examining four critical dimensions: context, connection, collaboration, and creativity. Each dimension represents an essential element of holistic learning, and the research seeks to gauge how effectively these are embedded in lesson planning and execution. Additionally, the study explores the potential relationship between the respondents' profiles and their level of 4C integration, offering a deeper understanding of how personal and professional factors may shape instructional practices. Lastly, the study identifies the challenges faced by teachers in implementing the 4C's, providing a basis for addressing these difficulties to enhance future teaching strategies.

However, the study is not without limitations. First, the sample is restricted to Grade 5 English teachers within Bolinao District Cluster II, which may limit the generalizability of findings to other grade levels, subjects, or districts. The study is also time-bound to the summer period of 2024 up to the first semester of school year 2024 - 2025, and the teachers' experiences during this specific time frame may not fully represent the challenges or practices encountered throughout the academic year. Furthermore, the data collected relies on self-reported perceptions, which may be subject to biases such as overestimation or underestimation of the actual integration of the 4C's.

1.7 Significance of the Study

The following shows how the results of the study are beneficial to the participants and the stakeholders.

School Administrators. The result of the study provides school administrators with valuable insights into the effectiveness of instructional practices through the integration of the 4C's: context, connection, collaboration, and creativity. By understanding how Grade 5 English teachers incorporate these essential elements into their instructional design, administrators can identify areas requiring additional support and professional development. This study equips them with data-driven recommendations to design training programs, allocate resources effectively, and establish policies that foster holistic and innovative learning environments within the Bolinao District Cluster II schools.

Teachers. The result of the study benefits teachers by offering a comprehensive understanding of the practical application and impact of the 4C's in instructional design. It highlights successful strategies and addresses common challenges faced in integrating these components into their teaching practices. This empowers educators to refine their approaches, adopt innovative methods, and enhance their ability to provide meaningful, student-centered learning experiences. Additionally, the findings serve as a source of motivation for teachers to embrace creativity and collaboration in their classrooms.

Learners. The result of the study indirectly benefits learners by improving the quality of their educational experiences. When teachers effectively integrate the 4C's into their instructional design, students are provided with a dynamic, engaging, and relevant learning environment. This holistic approach helps students develop essential 21st-century skills, such as critical thinking, creativity, teamwork, and problem-solving, which are crucial for their academic success and future endeavors.

Researchers. The result of the study serves as a foundational reference for researchers exploring similar topics in educational innovation and instructional design. It contributes to the growing body of literature on integrating the 4C's into teaching practices, providing a localized perspective specific to Grade 5 English teachers in Bolinao District Cluster II. Researchers can use the findings to build upon this study, explore other subjects or grade levels, or compare results across different educational settings.

Stakeholders. The result of the study informs stakeholders, such as educational policymakers and curriculum developers, about the practical implications of the 4C's integration in instructional design. It highlights the importance of equipping teachers with the necessary skills and resources to foster holistic learning. The study underscores the need for collaborative efforts among stakeholders to support innovative teaching strategies that prioritize student engagement and overall development.

Parents. The result of the study reassures parents that schools are committed to providing a comprehensive and well-rounded education for their children. By integrating the 4C's into instructional design, teachers create learning environments that go beyond traditional methods, fostering creativity, critical thinking, and collaboration among students. This ensures that learners are better prepared to face real-world challenges, giving parents confidence in the quality of education their children receive.

Future Researchers. The result of the study serves as a springboard for future researchers interested in further investigating the integration of the 4C's in instructional design. It provides a clear framework and baseline data that can guide subsequent studies in other subjects, grade levels, or districts. Future researchers can explore how the findings can be expanded, refined, or adapted to different educational contexts, ensuring the continuous development of innovative teaching practices.

1.8 Definition of Terms

Integration. It refers to the process of combining or coordinating separate elements into a unified whole to work together effectively (Merriam-Webster, 2019). In this study, it refers to how Grade 5 English teachers incorporate the 4C's—context, connection, collaboration, and creativity—into their instructional design to create cohesive and dynamic teaching practices.

Context. It refers to the circumstances or setting in which an event occurs, providing meaning and relevance to actions or ideas (Oxford Learner's Dictionary, 2019). In this study, it refers to the real-life scenarios or relatable situations that Grade 5 English teachers use to make lessons meaningful and relevant to their learners.

Connection. It refers to the relationship or link between two or more things that allow for mutual interaction or understanding (Cambridge Dictionary, 2019). In this study, it refers to the ability of teachers to establish meaningful links between concepts, subjects, and real-world applications in their instructional design.

Collaboration. It refers to the act of working together with others to achieve a common goal or complete a task (Merriam-Webster, 2019). In this study, it refers to the practice of engaging learners in group activities or cooperative tasks that promote teamwork and shared responsibility in the learning process.

Creativity. It refers to the ability to generate original ideas or solutions by thinking outside the box and using imagination (Runco & Jaeger, 2012). In this study, it refers to the strategies employed by teachers to encourage innovative thinking and problem-solving among learners through instructional design.

Comprehensive. It refers to something that is complete and covers all or nearly all aspects of a subject or process (Oxford Learner's Dictionary, 2019).
Operational Definition: In this study, it refers to the all-encompassing approach used by Grade 5 English teachers to integrate the 4C's into instructional design, addressing multiple facets of learning.
Approach. It refers to a way or method of dealing with something or achieving a particular goal (Cambridge Dictionary, 2019). In this study, it refers to the strategies and methodologies employed by teachers to incorporate the 4C's into their instructional design to enhance holistic learning.
Instructional Design. It refers to the systematic process of designing, developing, and delivering instructional materials and experiences to facilitate learning (Branch, 2018). In this study, it refers to the planned and structured methods Grade 5 English teachers use to create lesson plans that integrate the 4C's effectively.
Holistic Learning. It refers to an educational approach that addresses the intellectual, emotional, social, physical, and creative aspects of a learner's development (Forbes, 2018). In this study, it refers to the process of fostering well-rounded student development through instructional practices that integrate the 4C's, enabling learners to acquire skills for both academic success and life readiness.

II. RESEARCH METHODOLOGY

This chapter discusses research methodology, which includes research design and the procedures used to solve research problems. Similarly, it discusses the data collection tools as well as the statistical treatments that will be used to analyze the data.

2.1 Research Design

This study utilized the descriptive-correlational research design to examine the integration of the 4C's—context, connection, collaboration, and creativity—into the instructional design of Grade 5 English teachers in Bolinao District Cluster II. A descriptive-correlational design is particularly suited for studies that aim to describe the characteristics of a population and investigate the relationships between variables without manipulating them (Creswell & Creswell, 2018). This design aligns with the study's objective of understanding the current instructional practices of teachers while exploring how their demographic and professional profiles relate to the integration of the 4C's.

2.2 Sources Data

This study was conducted in Bolinao District Cluster II, a recognized educational jurisdiction within the Department of Education in the Philippines. Bolinao is a coastal municipality located in the province of Pangasinan, known for its rich cultural heritage and community-oriented educational programs. The district is composed of several schools that cater to learners from diverse backgrounds, predominantly from rural areas. The educational landscape of Bolinao District Cluster II reflects a mix of challenges and opportunities, making it an ideal setting to investigate the integration of innovative teaching approaches such as the 4C's—context, connection, collaboration, and creativity—into instructional design.

The focus of this research was on Grade 5 English teachers within the cluster. These educators were selected due to their pivotal role in developing foundational language and communication skills among learners, which are essential in fostering holistic learning. The schools within Bolinao District Cluster II share common characteristics, such as limited resources and varying levels of professional development opportunities for teachers. These factors provided a meaningful backdrop for understanding how teachers implement the 4C's in their instructional practices and the difficulties they face in doing so.

The study was conducted from the summer of 2023 to the first semester of the 2024-2025 academic year. This period was strategically chosen to capture the planning and implementation stages of instructional design, which typically occur during the summer preparation months and the early part of the school year. The timing allowed the researcher to gather insights into the challenges and successes experienced by teachers as they integrated the 4C's into their lesson plans and classroom activities.

Bolinao District Cluster II serves as a microcosm of rural Philippine education, where traditional teaching methods are gradually transitioning toward more student-centered and innovative approaches. By situating the study in this locale, the research provides valuable insights into how educators in similar rural settings can overcome challenges and leverage opportunities to improve instructional design. The findings also aim to contribute to the broader goal of enhancing holistic learning in the Philippine basic education system.

2.3 Population Sampling

This study employed cluster sampling as its sampling technique to select the Grade 5 English teachers who participated in the research. Cluster sampling is a probability sampling method where the population is divided into distinct groups or clusters, and a random selection of these clusters is made to represent the population (Creswell & Creswell, 2018). In this case, the clusters were the schools within Bolinao District Cluster II. All Grade 5 English teachers from the selected schools were included as respondents, making this technique efficient and practical for the study's context.

The appropriateness of cluster sampling for this thesis lies in the geographical distribution and organizational structure of the schools in Bolinao District Cluster II. The district is composed of multiple schools located across various barangays, making it logistically challenging to survey all Grade 5 English teachers in the area. Cluster sampling addressed this challenge by narrowing the focus to specific schools, reducing time and resource constraints while ensuring adequate representation of the district's teaching population. This method also facilitated a more manageable collection of data while maintaining the validity of the results (Fraenkel, Wallen, & Hyun, 2019).

Moreover, cluster sampling aligns with the study's goal of understanding the integration of the 4C's in instructional design among Grade 5 English teachers in a specific district. Since schools in the district share similar administrative structures and educational resources, they are naturally grouped into clusters that are homogeneous within but varied across clusters. This ensures that the findings from the selected schools are generalizable to the rest of the district, providing a comprehensive picture of the challenges and successes teachers face in integrating the 4C's.

In addition, cluster sampling minimizes potential biases that may arise in other sampling techniques. By randomly selecting clusters, the study ensured that all schools in the district had an equal chance of being included, thus reducing the likelihood of over-representation or under-representation of certain groups (Best & Kahn, 2016). This is particularly critical in educational research, where diversity in teaching practices, resources, and student demographics must be accounted for.

2.4 Instrumentation and Data Collection

The primary method of data collection for this study was a self-made questionnaire specifically designed to align with the principles of holistic learning emphasized in the Department of Education's MATATAG Agenda, which advocates for strengthened teaching strategies and learner-focused approaches. This questionnaire was tailored to assess the integration of the 4C's—context, connection, collaboration, and creativity—into the instructional design of Grade 5 English teachers in Bolinao District Cluster II. Developing a customized questionnaire ensured that the tool was directly aligned with the study's objectives, allowing for targeted data collection that provided meaningful insights.

To ensure the validity and reliability of the questionnaire, it underwent a rigorous validation process conducted by three subject-matter experts. These experts were chosen based on their extensive experience in education, instructional design, and research methodology. They assessed the instrument using a 10-item validity tool, which evaluated the questionnaire's clarity, relevance, alignment with the research objectives, and appropriateness for the respondents. This process ensured that the questions were both comprehensive and concise, reducing the likelihood of respondent confusion or misinterpretation (Fraenkel, Wallen, & Hyun, 2019).

The questionnaire consisted of three main sections: The first part gathered demographic information about the respondents, such as age, sex, marital status, length of service, position, and relevant training. The second section measured the perceived level of integration of the 4C's into instructional design, while the third part explored the challenges encountered by teachers in implementing these principles. The items were designed to be clear and straightforward, employing Likert-scale responses to quantify perceptions and open-ended questions to capture qualitative insights.

Numerical value	Score Range	Description
5	4.51 – 5.00	Very High (VH)
4	3.51 – 4.50	High (H)
3	2.51 – 3.50	Moderate (M)
2	1.51 – 2.50	Low (L)
1	1.00 – 1.50	Very low (VL)

To facilitate the efficient and accessible administration of the questionnaire, it was distributed online using Google Forms. This method was chosen to overcome logistical challenges, such as the geographical dispersion of schools within Bolinao District Cluster II, and to ensure that respondents could participate

conveniently. Google Forms also allowed for automated data collection and organization, reducing the risk of errors during data entry and enabling the researcher to analyze responses promptly.

In addition, an online platform should be used that is aligned with the MATATAG Agenda's focus on innovative and adaptive approaches to education. The digital administration of the questionnaire showcased the integration of technology in educational research, reflecting a modern approach consistent with the principles of the study (Creswell & Creswell, 2018). The combination of expert validation and accessible digital distribution ensured that the data collected were both reliable and representative of the respondents' experiences.

2.5 Tools for Data Analysis

To derive valuable insights and make significant discoveries, the data underwent a rigorous analysis employing appropriate statistical methods through IBM SPSS Statistics 20. This process ensured the precision of the results in accurately portraying the real situation and providing solutions to the research's addressed concerns.

To answer sub-problem 1, the profile of the respondents, frequency counts, and percentages were used.

To answer sub-problems 2, the perceived level of integration of the 4Cs in the instructional design, the weighted mean was computed and described using a five-point Likert scale with a descriptive equivalent shown below:

Score	Median Score Range	Descriptive Equivalents
5	4.51 – 5.00	Very Highly Integrated (VHI)
4	3.51 – 4.49	Highly Integrated (HI)
3	2.51 – 3.49	Integrated (I)
2	1.51 – 2.49	Slightly Integrated (Sl)
1	1.00 – 1.49	Not Integrated (NI)

To answer sub-problem 4 and to test if there is a significant relationship between the perceived level of integration of the 4Cs in the instructional design and the respondents' profile variables, Pearson-R, Point Biserial, and Spearman-rho were utilized.

To answer sub-problem number 5, the difficulties encountered by the Grade Teachers in the integration of 4Cs, the weighted mean was computed, Mean and Rank are described using a five-point Likert scale with a descriptive equivalent shown below:

Score	Median Score Range	Descriptive Equivalents
5	4.51 – 5.00	Very Highly Serious (ES)
4	3.51 – 4.50	Very Serious (VS)
3	2.51 – 3.50	Serious (SoS)
2	1.51 – 2.50	Slightly Serious (SlS)
1	1.00 – 1.50	Not Serious (NS)

To answer sub-problem number 6, recommendations and a plan of action were proposed.

III. RESULTS AND DISCUSSION

This chapter presents the results of the study based on the gathered, analyzed, and interpreted data. The results are arranged according to the order of the problems stated in the previous chapter.

Test of Relationship between the Perceived Level of Grade 5 English Teachers in Integration of 4Cs to Instructional Design for Holistic Learning between the Profile Variable of Respondents

Profile		Context	Connection	Collaboration	Creativity	4Cs
Age[a]	r	-0.094	-0.112	-0.152	-0.120	-0.128
	Sig.	0.710	0.660	0.547	0.634	0.614
Sex[b]	r	0.240	0.376	0.281	0.282	0.309
	Sig.	0.337	0.124	0.259	0.257	0.212
Marital Status[d]	r	0.052	-0.013	0.130	0.223	0.116
	Sig.	0.837	0.958	0.608	0.375	0.646
Length of Service[a]	r	-0.033	0.158	0.173	0.260	0.193
	Sig.	0.895	0.532	0.493	0.297	0.443
Relevant Training[a]	r	0.155	0.062	-0.041	-0.006	0.043
	Sig.	0.538	0.806	0.872	0.980	0.864

*Significant at 0.05

[a]Pearson-r; [b]Point Biserial Correlation; [c]Spearman – Rho

This table presents the results of the test of relationship between the perceived level of Grade 5 English teachers in the integration of the 4Cs (Context, Connection, Collaboration, Creativity) into instructional design for holistic learning, based on their profile variables. The table provides the correlation coefficients (r) and significance values (p) for various profile factors such as age, sex, marital status, length of service, and relevant training.

The data reveals that none of the profile variables show a statistically significant relationship with the integration of the 4Cs into instructional design, as indicated by the p-values exceeding 0.05. Specifically, age (r = -0.094 to -0.128, p > 0.05), sex (r = 0.240 to 0.309, p > 0.05), marital status (r = -0.013 to 0.223, p > 0.05), length of service (r = -0.033 to 0.260, p > 0.05), and relevant training (r = -0.006 to 0.155, p > 0.05) all show no statistically significant correlation with the integration of the 4Cs into instructional design.

This suggests that factors such as age, sex, marital status, teaching experience, and training do not appear to influence the extent to which teachers integrate the 4Cs into their teaching. This finding corroborates previous research that indicates the complexity of integrating the 4Cs into instructional design, with teachers often facing challenges unrelated to demographic or experiential factors. For instance, the integration of 4Cs may be influenced by institutional factors, such as access to professional development and resources (Herlinawati et al., 2024).

Moreover, while studies have shown that professional development and teacher experience can enhance instructional practices (Adewale, 2024; Waigera et al., 2020), this study's findings suggest that such factors may not necessarily play a decisive role in the integration of the 4Cs. This aligns with the work of Williams & Charles-Ogan (2023), who reported that teachers, despite understanding the importance of integrating creativity and collaboration, struggle with fully embedding these elements into their lessons.

These results imply that other factors beyond the profile variables examined, such as the availability of resources, institutional support, and the teachers' approach to pedagogy, may have a more significant impact on the integration of the 4Cs. The findings contribute to the ongoing dialogue on how best to support teachers in embedding the 4Cs within instructional designs, which is essential for fostering a more holistic, 21st-century education (Pardede, 2020; Mallillin et al., 2021).

IV. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary, conclusions, and recommendations based on the gathered, analyzed, and interpreted results.

4.1 Summary

The main objective of this study is to assess the perceived level of integration of the 4Cs (Critical Thinking, Communication, Collaboration, and Creativity) into the instructional designs of Grade 5 English teachers. It also seeks to identify the difficulties they face when attempting to integrate these skills for holistic learning.

Set at 0.05 alpha level, the null hypothesis for this study states that there is no significant relationship between the teachers' demographic profile (such as age, gender, and teaching experience) and their perceived level of integration of the 4Cs in their instructional design.

The research design used is a descriptive-correlational design, which aims to describe the current state of 4C integration among the teachers and examine any relationships between their demographic profile and their instructional practices.

A cluster sampling technique was employed, where participants were selected based on specific characteristics such as their teaching position and involvement in the Bolinao District Cluster II.

The data were collected using a self-made questionnaire based on MATATAG Shaping Paper. It was designed to gather information on the teachers' demographic profiles, their perceptions of 4C integration, the difficulties they encounter in instructional design, and other relevant factors.

For statistical treatment, frequency counts, weighted means, Pearson's correlation, Spearman rho, and Rank were applied to analyze the data. These statistical tools helped to summarize the teachers' responses, assess the level of 4C integration, and determine if any significant relationships existed between the variables.

4.2 Conclusions

From the presented results, the following conclusions are drawn:

1. The Grade 5 English teachers in Bolinao District Cluster II are predominantly in the age range of 26 to 35 years, with a majority of them being female. This demographic suggests a relatively young and diverse teaching force, which may be open to new teaching approaches and methodologies.
2. A significant portion of the teachers has between 4 to 8 years of teaching experience, and while many have received relevant training, the frequency of training varies. This indicates that while many teachers are well-experienced, there may be gaps in continuous professional development, particularly in relation to the integration of modern teaching methods like the 4Cs.
3. The teachers perceive the integration of the 4Cs (Context, Connection, Collaboration, and Creativity) into their instructional designs to be highly effective. All four components of the 4Cs received high ratings, suggesting that teachers understand the importance of these elements and are incorporating them into their lesson planning.
4. There is no significant correlation between the teachers' profile (age, sex, marital status, length of service, and relevant training) and the level of integration of the 4Cs into their teaching practice. This suggests that other factors, such as personal commitment or school environment, may be influencing their approach to the 4Cs more than demographic factors.
5. The most common difficulties teachers face in integrating the 4Cs involve aligning instructional goals with diverse cultural backgrounds, sourcing real-world scenarios relevant to the curriculum, and balancing the time needed for interdisciplinary learning and reflective practices. These challenges point to the complexity of meeting the diverse needs of students while incorporating 21st-century skills into lessons.
6. While technology is perceived as an important tool to connect students with broader learning communities, teachers report difficulties in making technology accessible to all students. This highlights a gap in resources or training in using technology effectively to support the 4Cs.

4.3 Recommendations

Based on the results of the study, the following recommendations are hereby presented:

1. To address the lack of continuous relevant training, it is recommended that the school district provide more focused professional development opportunities for teachers. These should emphasize effective strategies for integrating the 4Cs and making technology more accessible in the classroom.
2. Given the difficulty teachers face in aligning instructional goals with diverse cultural backgrounds, workshops on cultural sensitivity and inclusive teaching methods could be implemented. These would

help teachers better understand how to connect content to their students' backgrounds and enhance the relevance of their lessons.

3. Teachers should be encouraged to collaborate more with one another and with local organizations to share resources and ideas that can address challenges like finding real-world scenarios or sourcing diverse perspectives. This could help alleviate the strain of having to source all teaching materials independently.

4. Schools should provide teachers with more flexibility in adapting their curriculum to current events and societal issues. Offering structured time for interdisciplinary learning and reflective practices could help ease the pressure teachers face in balancing these activities with the regular curriculum.

5. In light of the difficulties teachers encounter with technology integration, the district should invest in more accessible technology and provide training on how to use digital tools to enhance learning and collaboration effectively. This could involve ensuring that all students have access to devices and online learning resources.

6. It would be beneficial for school administrators to establish a system of regular feedback and monitoring for teachers on their implementation of the 4Cs. This would allow for ongoing support and adjustments to teaching strategies, ensuring that teachers continue to feel confident and capable of integrating the 4Cs into their instruction.

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