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Use of Differentiated Instructions Among Multigrade Teachers in Calbayog City Division

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Abstract — This study looks into the use of differentiated instruction among multigrade teachers in Calbayog City Division during School Year 2024 -2025 with the intention of proposing a capacity enhancement program. Based on Tomlinson's Differentiated Instruction model, Vygotsky's Sociocultural Theory and Gardner's Theory of Multiple Intelligences, the study used the descriptive- correlational research design. 101 Multigrade teachers were purposely and stratified selected for the study which was conducted against purposely and stratified sample. Data were obtained through a validated questionnaire, and then analyzed through descriptive and inferential analysis in SPSS. Findings show that the components of differentiated instruction highly implemented by multigrade teachers were four in number. content, process, product, and environment. Teachers also expressed exceptionally good perceptions of its use. There is, however, a low turnout with regard to professional development seminars and trainings, especially among novice teachers. Important associations between some teacher profile variables and their varied instruction practices and perceptions as well as learners' academic performance were recorded. Building on the results, a proposed enhancement program in capacity was designed to enhance effective and sustained use of differentiated instruction in multigrade classroom settings. The importance of continuous professional development, providing contextualized teaching strategies and administrative support in ensuring equitable learning experiences for all learners in multigrade setting is brought into focus on the study.

Keywords — Differentiated instruction, multigrade teaching, instructional strategies, teacher perception, learner diversity

I. Introduction

The introduction of a thesis provides the research context, outlining the main problem, its significance, and the study's objectives. It briefly reviews relevant theories or literature gaps,

establishing the study's purpose and potential contributions. This section guides readers on what to expect, setting a foundation for the research's scope and impact.

Background and Rationale

Diversity is prevalent, particularly in classrooms, where students exhibit a wide range of unique characteristics. Additionally, they have different ways of learning and processing information. Certain learning approaches are preferred by certain students (Gregory & Chapman, 2018). For this reason, the one-size-fits-all strategy is no longer suitable.

According to the researchers' own teaching experiences, employing a "one-size-fits-all" strategy has a detrimental impact on learning outcomes and presents a learning acquisition challenge. Consequently, it becomes imperative that educators differentiate their instruction. According to Pozas et al. (2020) and Sharp et al. (2020), differentiation is associated with addressing the different phases of learning. It offers a classroom where students can follow various routes to learning material, understanding concepts, processing them, and creating products. Therefore, teaching methods should be adjusted to accommodate more complicated learning while still accomplishing desired educational results, in accordance with the opinions of Chamberlin (2020), Chapman and King (2021), and Watts-Taff et al. (2022).

In light of this, educators can differentiate instruction using the following elements: (a) material, (b) procedure, (c) product, and (d) environment with regard to the traits and interests of the students. Offering various subjects or subtopics to help the students reach the learning objectives is one way to differentiate instruction through content. By creating multiple learning activities, teachers can also differentiate instruction throughout the process. The secret to distinguishing education through the product is to demonstrate learning through the development of various products.

However, based on the researchers' experiences, even though differentiated instruction takes into account the learning differences of the students, it is important to pay attention to a number of factors to make sure that the teachers are able to implement it effectively. Data from the Kentucky Performance Rating for Exceptional Progress (K-PREP) shows that even though English language teachers in the Kentucky, USA, school district use differentiated instruction, 610 English language learners are unable to achieve the standard competency in an international setting. The results show that their grade levels do not match their academic performance (Pegram, 2019).

Additionally, the results of the Mavroudi (2016) study show that teachers have a very positive attitude toward diversified education and have a knowledge of the diversity in classroom arrangement. The findings showed that teachers' attitudes toward differentiated instruction and their selection of differentiated strategies are influenced by their personal traits, such as age, experiences, and formal education.

Considering the national perspective, there is a growing problem with ELLs' performance, particularly in English, according to the findings of the Early Language Literacy and Numeracy Assessment (ELLNA) and the National Achievement Test (NAT). Based on the results of the EF Standard English Test (EF SET), the Philippines' English Proficiency Index (EPI) ranking dropped from 20th to 27th position. Villanca (2016) looked into the learners' preferred methods of learning as well as the teachers' uses of diversified English instruction. The project was carried out at Sankanan Elementary School in the Bukidnon Division's Manolo Fortch 1. According to the findings, kinesthetic, auditory, and visual learning modes were often preferred by pupils in grades one through six. In addition, the findings imply that teachers frequently use differentiated instruction as a teaching strategy in terms of environment, product, process, and topic.

This study filled a research gap regarding the difficulties multigrade teachers face when implementing differentiated instruction by using the four essential components of differentiation—content, process, product, and environment—as parameters to ascertain respondents' attitudes and behaviors. Filling the research gap benefits multigrade teachers in Calbayog City Division because it (a) makes the school of multigrade teachers more competitive and competent by integrating innovation into professional growth and development training; (b) enhances multigrade teachers' capacity to support ELLs' learning through differentiated instruction as an instructional practice; and (c) improves ELLs' academic achievement because they are the main beneficiaries of the instructional practices.

For these reasons, the researchers thought it would be good to investigate how school teachers felt about using differentiation in multi-grade instruction. Based on the findings, a capacity enhancement program was created to help trainers and administrators provide a successful

Review of Literature

We created a database using Filemaker Pro after entering the information from the observations and interviews into Excel. The data was organized according to the observation tool's guiding questions, the evidence and impressions collected by the two observers were pooled, and any impressions without supporting documentation were removed. In phase two, we created broad themes based on the main study question: How did instructors differentiate instruction in arithmetic and language classes in multigrade preprimary classrooms in Kenya? In step three, we began the process of categorizing the data by creating a themes and data matrix and enumerating the evidence that supports each theme (Maxwell, 2012; Miles & Huberman, 1994). The two curriculum areas' observations were handled as distinct observations, despite the fact that the same teacher in the study instructed both a language and a math course. All 16 observations' worth of data were repeatedly grouped into themes using this matrix. We used the pre-existing themes in step four to categorize the teacher interview data in order to confirm the patterns we had found during the observations. We followed a similar process for the interview data: after putting the data into a computer, we created a matrix and structured the data according to the themes we talked about. We connected specific teacher observations to the reasons behind their implementation of

a certain differentiation-focused teaching approach. We were able to gain a deeper understanding of the motivation behind the actions taken by teachers thanks to this investigation.

Research Literature.

Tomlinson's (2014) Differentiated Instruction model is a standard to deal with Tomlinson's theory of instructional adaptation in light of student diversity. This study would be based on research on differentiated instruction (DI). According to Tomlinson et al. (2017), differentiation is a proactive strategy whereby educators alter curriculum objectives, instructional strategies, materials, learning exercises, and student work to maximize learning opportunities for every student, despite differences. Diversified Instruction (DI) has been shown to significantly improve student achievement in a number of studies (Dixon et al., 2019; Reis et al., 2018; Ruys et al., 2018; Seiler, 2016; Tomlinson et al., 2017; Tulbure, 2017; Valiande & Koutselini, 2019).

According to Tomlinson and Imbeau (2019), the five guiding principles of differentiated instruction (DI) are practical, adaptable to ordinary classroom education, and helpful. These five guiding principles include a nurturing environment, a top-notch curriculum, assessment that directs instruction, education that accommodates student variances, student leadership, and routine management. According to Tomlinson (2019), differentiation can be linked through differences in the learning environment, process, product, and content based on the mindset of these five principles. Individual student learning profiles, readiness, and interest are the main focuses of this differentiation process.

II. Methodology

This chapter outlines the research approach employed in this study. This will include details on how the sample size was determined, the criteria for selecting survey locations and timing, and the methodology for choosing respondents. This chapter also explains the rationale behind the research strategy, the selection of research instruments, the data collection methods, and the statistical analysis techniques used to derive meaningful insights from the collected data.

Research Design

The research study made use of the descriptive-correlational research design. It is descriptive quantitative because it determines the profile of the respondents in terms of age, gender, educational attainment, length of Teaching Experience, and related seminars and trainings attended. In addition, this study is correlational because it tests the relationships between and among the listed variables. In order to obtain authorization for the study, the researchers presented a transmittal letter to the superintendent of the Schools Division and asked the head of the office where the research was conducted for permission. The questionnaire was distributed, given out, and collected from the respondents by the researchers. Several statistical tests, such as

percentage, simple mean, and sum of ranks, were used to tabulate, analyze, and interpret the responses.

Sample of the study

Teachers of multi grades from the Calbayog City Division who use differentiated instruction in their classrooms make up the study's sample. In order to give participants practical experience using a variety of instructional strategies to meet the requirements of diverse students, the study will specifically involve teachers managing multiple grade levels in a single classroom setting. School heads and education supervisors with experience in multigrade instruction will also be consulted to deepen the study's understanding of the difficulties and support systems related to differentiated instruction in multigrade settings.

To guarantee that participants have enough exposure to diverse instruction approaches, a purposive sampling technique will be used to choose teachers with at least two years of multigrade teaching experience. In order to capture the contextual elements driving instructional differentiation, stratified sampling will also be employed to represent schools from various geographic locations, including lowland and highland areas. This method guarantees a thorough examination of the application of differentiated education in multigrade classrooms, offering a thorough grasp of both its advantages and disadvantages.

Measures

The study will use a two-part questionnaire to assess the respondents' knowledge of the Use of Differentiated Instructions Among Multigrade Teachers in Calbayog City Division. The first part will gather personal information such as age, gender, educational attainment, length of Teaching Experience, and related seminars and training attended. The research questionnaire was adopted to the study of Allan A. Talain titled “Teachers’ Perspectives on the Use of Differentiated Instruction for English Language Teaching”.

The second part will consist of a five-point Likert scale questionnaire with 40 items in total, divided into two subscales the differentiated instruction practices among multigrade teachers in Calbayog City Division; and the perceptions of utilization of differentiated instruction for multigrade teachers in Calbayog City Division.

This tool will undergo validation to ensure its reliability and validity (a = 0.83), ensuring that it captures relevant data with credibility and accuracy. Using this tool will provide a comprehensive understanding of engagement levels allowing for valuable insights and conclusions to be drawn for the study.

Data Processing

SPSS version 21 will be used for data processing in order to conduct a thorough analysis that is in line with the research questions regarding the differentiated instruction practices of

multigrade teachers. The profiles of the respondents, their opinions of utilization, the academic achievement of students, and the application of differentiated instruction across the dimensions of content, process, product, and environment will all be examined using descriptive statistics, including frequency, percentage, mean, and standard deviation. The Shapiro-Wilk test will establish the normality of the data before correlation analyses. Pearson's r will analyze the relationships between continuous variables, point-biserial correlation for dichotomous variables (civil status, sex), and ETA correlation for nominal variables in data that is normally distributed. Non-parametric alternatives, such as the Kruskal-Wallis H test for nominal variables, the Mann-Whitney U test for dichotomous variables, and Spearman's rho for continuous variables, will be used if non-normal distributions are found. This will ensure that all research questions are adequately addressed and that the five null hypotheses about the relationships between teacher profiles, differentiated instruction practices, perceptions, and student academic performance are successfully tested.

Ethical Considerations

By following the guidelines of voluntary participation, informed consent, and confidentiality, this study maintains ethical integrity. All participating multigrade teachers will get information about the study's goals, methods, and participant rights prior to data collection. They will have to give written agreement, guaranteeing that their involvement is completely voluntary and that they can stop at any time without facing any consequences.

Instead of using personal identifiers, codes will be assigned to ensure extreme confidentiality and anonymity. Only the researcher will have secure access to the data. To guarantee adherence to institutional policies, ethical approval will also be requested from the appropriate authorities, such as the Department of Education and the school administration. Additionally, the study will guarantee that results are presented impartially, free from bias or data falsification.

Additionally, throughout the research process, this study will guarantee that each participant's dignity and well-being are respected. Given the hierarchical structure of educational institutions, participants will not experience any physical, psychological, or emotional harm, and every effort will be made to prevent coercion or undue influence. To ensure clarity and appropriateness, the data collection tools will be piloted beforehand and designed to minimize discomfort. Participants will be reminded of their right to refuse to answer any question that makes them uncomfortable during surveys or interviews. To encourage openness and accountability, participants will have the option to view a summary of the results upon request following the study. All of these actions together demonstrate the researcher's dedication to maintaining moral research procedures that comply with institutional, national, and worldwide standards.

III. Results and Discussion

Discussion

This section presents the summary of findings, conclusions, and recommendations based on the assessment of differentiated instruction practices among multigrade teachers in the Schools Division of Calbayog City. The discussion addresses each research question identified in the study, examining the relationships between teacher profiles, differentiated instruction practices, perceptions, and student academic performance.

The demographic profile of multigrade teachers revealed a relatively young workforce with sixty-five point thirty-four percent aged 25-35 years (mean age=34.72, SD=7.59). Gender distribution showed a female predominance (71.3%, n=72), with balanced civil status representation between single (53.47%, n=54) and married (44.55%, n=45) teachers. Educational attainment was concentrated at the Master's Units level (52.48%, n=53), followed by College Degree holders (39.60%, n=40). Teaching experience was predominantly early-career, with fifty-two point forty-seven percent having 0-5 years of experience (mean=7.83, SD=6.42). Professional development participation was limited, with sixty-three point thirty-six percent attending 0-2 training programs related to differentiated instruction (mean=2.72, SD=2.31).

All of the following mean scores and standard deviations showed that differentiated instruction techniques were thought to be very effective: environment (M = 4.73, SD = 0.49), product (M = 4.70, SD = 0.51), process (M = 4.70, SD = 0.51), and content (M = 4.72, SD = 0.50). The environment dimension was rated as the most effective overall out of all of them.

All dimensions of differentiated education were assessed as extremely effective, with the environment obtaining the highest overall rating (M=4.76, SD=0.45), followed by content (M=4.73, SD=0.48), procedure (M=4.74, SD=0.47), and product (M=4.75, SD=0.46).

Academic performance of multigrade learners was predominantly positive, with seventy-three point twenty-six percent achieving Satisfactory ratings or higher (M=84.26, SD=5.12) and no students failing to meet expectations (0.00%).

No significant relationships were found between teachers' age, sex, or civil status and their differentiated instruction practices or perceptions. However, significant positive correlations were found between years of teaching experience and practices (r=0.219 to 0.257), educational attainment and practices (r=0.319 to 0.345), years of teaching experience and perceptions (r=0.231 to 0.276), and educational attainment and perceptions (r=0.328 to 0.371).

Professional development participation showed the strongest correlations with both practices (r=0.315 to 0.352) and perceptions (r=0.353 to 0.395) across all differentiation dimensions.

Highly significant positive correlations were found between practices and perceptions across all dimensions (r=0.572 to 0.825), with the strongest correlations observed between corresponding dimensions.

Both differentiated instruction practices (r=0.519 to 0.563) and perceptions (r=0.472 to 0.523) showed highly significant positive correlations with student academic performance, with product differentiation showing the strongest relationships in both cases.

IV. Conclusion

The demographic profile of multigrade teachers in Calbayog City Division reveals a predominantly young, female workforce with substantial engagement in graduate education but limited teaching experience and professional development participation. This profile suggests a dynamic teaching force with strong educational foundations but potential needs for enhanced experiential learning and differentiated instruction training.

Teachers demonstrate extremely effective implementation of differentiated instruction practices across all dimensions, reflecting a strong understanding of Tomlinson's framework emphasizing content, process, product, and environment differentiation. The slightly higher ratings for environmental differentiation suggest particular attention to creating inclusive learning environments that accommodate diverse student needs.

Teacher perceptions closely align with practices, indicating strong congruence between theoretical understanding and practical implementation. This alignment supports sociocultural theories and multiple intelligences approaches, which emphasize that effective instruction must address diverse learning needs through varied approaches.

The consistently strong academic performance of multigrade learners, with no students failing to meet expectations, validates differentiated instruction's effectiveness in multigrade settings. This finding contradicts perceptions of multigrade teaching as a necessary compromise, instead positioning it as a pedagogical approach capable of delivering strong academic outcomes.

While demographic factors like age, sex, and civil status do not significantly influence differentiated instruction implementation, professional factors including years of experience, educational attainment, and professional development participation exhibit strong positive relationships with both practices and perceptions. This pattern suggests that professional growth factors, rather than personal characteristics, most significantly impact differentiation effectiveness.

The exceptionally strong correlations between practices and perceptions suggest that teachers who effectively implement differentiated instruction also strongly believe in its effectiveness, creating a positive reinforcement cycle. This relationship indicates that enhancing

either teachers' skills or attitudes may positively influence both dimensions, creating mutually reinforcing improvement.

The highly significant correlations between both practices and perceptions with academic performance, particularly for product differentiation, validate differentiated instruction's effectiveness in enhancing student achievement in multigrade settings. These relationships provide strong evidence that differentiated approaches substantially contribute to student success in complex multigrade environments.

The consistent pattern of stronger correlations for product differentiation with academic performance suggests that assessment approaches play a particularly crucial role in student achievement. This finding highlights the importance of diverse assessment strategies as a key component in effective differentiated instruction implementation.

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