



ENHANCE COMPETECIES AND TEACHING SKILLS OF THE GRADE 5 MATH TEACHERS IN NUEVA ECIJA

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THESIS ABSTRACT

This study used the descriptive method of research in the assessment of professional profile of the Grade 5 Mathematics teachers in Nueva Ecija during the school year 2024-2025. The assessment included the professional profile of the Mathematics teachers in terms of their highest educational attainment, number of years of experience as Mathematics teachers and relevant in-service trainings attended; the level of performance of the Grade 5 Mathematics learners and the problems being met by the Grade 5 Mathematics teachers in the teaching of Mathematics in the implementation of Mathematics in the K-12 curriculum. The output of this study is a proposed recommendations to enhance the teaching skills and competencies of the Grade 5 Mathematics teachers in Nueva Ecija. The forty-six (46) Grade 5 Mathematics teachers served as respondents of the study. Frequency, Percentage and Average Weighted Mean was used to treat the different sub-problems in the study.

Findings

- 1.0 Professional Profile of the Grade 5 Mathematics Teachers in Nueva Ecija
 - 1.1. Majority of the Grade 5 Mathematics teachers finished BSEED with MA units 10 or 21.74 percent.
 - 1.2. The Grade 5 teachers had a number of years of experience as Mathematics teachers 0-3 and 4-6 years of experience or 15 or 32.61 percent.

1.3. The Grade 5 teachers attended various in-service trainings from the Regional, Division to District Level.

2.0 Level of Performance of the Grade 5 Learners in Mathematics Based on a Teacher Made-Test.

2.1 The level of performance of the Grade 5 learners in

Mathematics was “Poor” 23 or 39. 65 percent.

3.0 Problems Being Met By The Grade 5 Mathematics

Teachers In The Teaching Of Mathematics As A

Subject In The K-12 Curriculum.

3.1 Majority of the Grade 5 Mathematics Teachers

revealed that they met problems in the teaching of

mathematics to a “Serious” problem along teacher,

pupil and parent related-problems.

4.0 Proposed Recommendations To Enhance The Teaching

Skills And Competencies Of The Grade 5 Mathematics

Teachers In Nueva Ecija, Division of

Pangasinan I.

4.1 The proposed recommendations can enhance the

teaching skills and competencies of the Grade 5

Mathematics Teachers in Nueva Ecija.

CONCLUSIONS

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

1. The level of performance of the Grade 5 learners in Mathematics can still be improved.
2. The problem being met by the Grade 5 Mathematics Teacher can as given possible solutions.
3. The proposed recommendations can help the Grade 5 mathematics teachers improved their teaching skills in mathematics.

RECOMMENDATIONS

Based on the conclusions drawn the following recommendations are hereby offered.

1. The proposed recommendations are forwarded to the Grade 5 Mathematics Teachers for implementation in order to have effective implementation of the Mathematics Program.
2. The professional profile of the Grade 5 Mathematics teachers should be updated by way enrolling in the Graduate Program.
3. Similar studies be conducted in a writer scope, Regional, Division level to validate the findings of the study.

CHAPTER 1

THE PROBLEM

Rationale

Teaching and learning mathematics are complex tasks. The effect on student learning of changing a single teaching practice may be difficult to discern because of the simultaneous effects of both the other teaching activities that surround it and the context in which the teaching takes place. Thus, as teachers seek to improve their teaching effectiveness by changing their instructional practices, they should carefully consider the teaching context, giving special consideration to the types of students they teach. And, further, they should not judge the results of their new practices too quickly. Judgments about the appropriateness of their decisions must be based on more than a single outcome. If the results are not completely satisfactory,

teachers should consider the circumstances that may be diminishing the impact of the practices they implementing. For example, the value of a teacher focusing more attention on teaching for meaning may not be demonstrated if student assessments concentrate on rote recall of facts and proficient use of isolated skills.

Schools that serve students of poverty that are beating the odds and performing on par and in some cases better than schools that serve more affluent students. To determine what can be reproduce elsewhere, this thesis take a look what is taking place taking place in this schools: a demanding curriculum, implementation of problem solving, deep understanding and communication of mathematics, continual reworking of curriculum, using valid instructional practices, building relationships, and teacher leadership. For instructional practices to improve, teachers must step up and become leaders in the classroom to impact the environment and school culture. Six principles are discussed that are critical to making the changes to necessary to impact student achievement in schools that serve the poor. To assist in the battle to improve instruction and student learning in schools that serve the poor, colleges and universities can play a critical role (Sims, 2021).

It has recognized that building the capacity of teachers and schools to teach pupils with a diverse range of SEN is key to raising the achievement of these pupils. This report provides an overview of teaching strategies and approaches for pupils with special educational needs, the theoretical underpinnings of these strategies and approaches, and the role of specialist knowledge in teaching these pupils. The report also considers how the findings of the scoping study might become embedded in every day teaching practice (Davis et. al., 2023).

When students struggle with the academic concepts, schools try a variety of intervention tactics. Remediation strategies are one type of intervention. Effective remediation involves assessing the student's needs, providing intervention and evaluating student outcomes. Successful remediation programs adjust the instruction based on the student's response to the intervention (Seehorn of eHow.com).

The number of research studies conducted in mathematics education over the past three decades has increased dramatically (Kilpatrick, 1992). The resulting research base spans a broad range of content, grade levels and research methodologies. The results from these studies, together with relevant findings from

research in other domains, such as cognitive psychology are used to identify the successful teaching strategies and practices in mathematics.

The quality of the implementation of the teaching practice also greatly influences its impact in student learning. The value of using manipulative materials to investigate a concept, for example, depends not only in *whether* manipulative are used, but also on *how* they are used with the students. Similarly, small group instruction will benefit students only if the teacher knows when and how to use this teaching practice. Hence, as a teacher implements any of the recommendations, it is essential that he or she constantly monitors and adjusts the way the practice is implemented in order to optimize improvements in quality. These cautions notwithstanding, the research findings indicate that certain teaching strategies and methods are worth careful consideration as teachers strive to improve their mathematics teaching practices. As readers examine the suggestions that follow, it will become clear that many of the practices are interrelated. There is also considerable variety in the practices that have been found to be effective, and so most teachers should be able to identify ideas they would like to try in their classrooms. The practices are not mutually exclusive; indeed, they tend to be complementary. The logical consistency and variety in the suggestions from research make them both interesting and practical.

Conceptual Framework

The teacher of Mathematics has two problems. The first is to provide his pupils mathematical experiences suitable to the state development of their existing concepts and to fit his method of presentation to the pupils' concrete or formal level of thinking. The second is to analyze new mathematical himself so that he can synthesize his own concept in way most meaningful for his independent of the teacher. To solve these problems in ways that will meet the needs of the learners, the teacher needs to know and how to use different teaching strategies.

Figure 1 in the next page presents the paradigm of the conceptual framework of the study using the “Input-Process-Output” model. For input, included is the professional profile of the Grade 5 mathematics teachers in terms of their highest educational attainment, number of years of experience teaching Mathematics, relevant in-service trainings attended, level of performance of the Grade 5 mathematics teachers in the implementation of the Mathematics in the k-12 curriculum. The output of the study is the

recommendations to enhance the teaching skills and competence of the Mathematical teacher in the teaching of Mathematics in the K-12 curriculum.

Enhance Competencies and Teaching Skills of the Grade 5 Math Teachers in Nueva Ecija

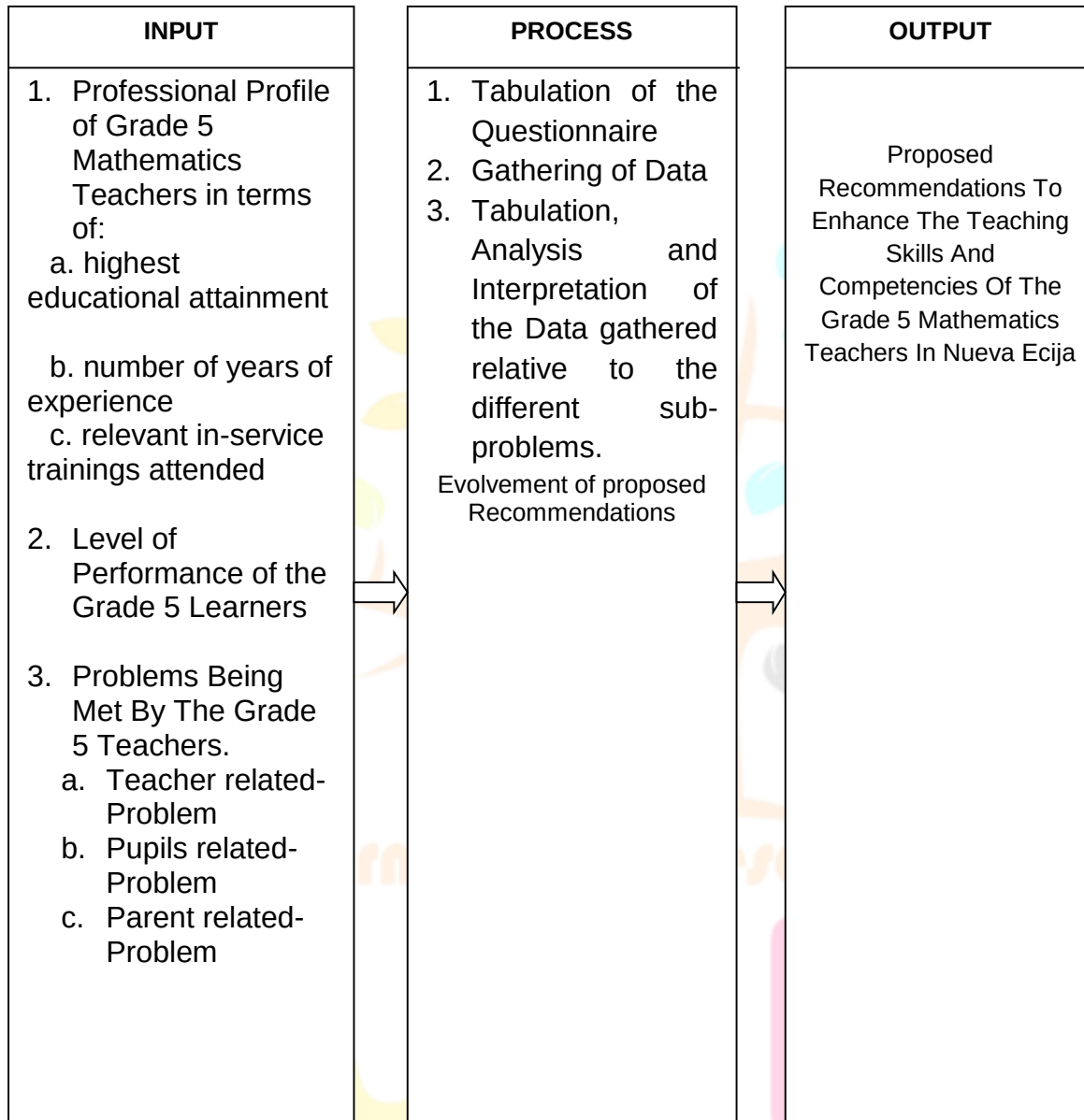


Figure I

The Paradigm of the Conceptual Framework of the Study

Statement of the Problem

This study assessed the professional profile of the Grade 5 Mathematics teachers in Guimba West District, Nueva Ecija during the school year 2024-2025.

Specifically, it sought to answer the following sub-problems:

1. What is the professional profile of the Grade 5 Mathematics Teachers in Guimba West District in terms of the following:
 - a. highest educational attainment
 - b. number of years of experience teaching Mathematics
 - c. relevant in-service trainings attended
2. What is the level of performance of the Grade 5 Mathematics Learners based on the analysis of a teacher-made test?
3. What is the problems being met by the Grade 5 Mathematics teachers in the teaching of Mathematics as a subject in the k-12 curriculum?
4. Based on the analysis of the findings, what recommendations can be proposed to enhance the teaching skills and competencies of Mathematics teachers in Guimba West District?

Basic Assumptions

This study is anchored on the following basic assumptions:

1. The professional profile of the Grade 5 Mathematics teachers will serve as frame of reference in improving the performance level of the Grade 5 pupils.
2. The proposed recommendations can enhance the teaching skills and competencies of the Grade 5 Mathematics teachers if it will be fully implemented.

Scope and Delimitation

This study was delimited to the assessment of the professional profile of the Grade 5 Mathematics teachers in Guimba West District, Nueva Ecija during the school year 2024-2025. The study included the profile of the Grade 5 Mathematics teachers in terms of their highest educational attainment, number of years of experience as Mathematics teachers and relevant in-service trainings attended in Mathematics; the level of performance of the Grade 5 learners and the problems being met by the Grade 5 Mathematics teachers in Mathematics as a subject in the K-12 curriculum. The output of the study is a proposed recommendation to enhance the teaching skills and competencies of the Grade 5 Mathematics teacher in the Guimba West District in the implementation of the K-12 curriculum.

The study did not cover the implementation of the proposed recommendations due to time constraints.

Significance of the Study

Results of this study will benefit the following:

School administrators. The result of this study will help them to monitor religiously the implementation of Mathematics as a subject in the K-12 curriculum.

Mathematics Teachers. Findings of this study will help them improve their teaching skills and competencies in the teaching of Mathematics as a subject in the k-12 curriculum.

Grade 5 Learners. The result of this study will benefit them as they are the end beneficiaries of the Mathematics program.

The Researcher Himself. The result of this study will help her improve the academic performance of the Grade 5 learners in Mathematics and to implement the k-12 curriculum religiously.

Other Researcher. Result of this study will serve a frame of reference to conduct other learning areas.

Definition of Terms

The following terms were operationally defined as they were used in the study.

Professional Profile. This refers to the highest educational attainment, number of years of experience teaching Mathematics and relevant in-service trainings attended in Mathematics by the Grade 5 Mathematics teachers in Guimba West District.

Level of Performance. This refers to the results of the teacher made test administered to the Grade 5 learners in Mathematics.

Problems. As used in the study they were the identified problems being met by the Mathematics Teachers in the teaching of Mathematics in the K-12 curriculum.

Recommendations. As used in the study, it is the output to enhance the teaching skills and competencies by the Grade 5 Mathematics teachers in Guimba West District.

New Trends in Mathematics Teaching

Though many children's books are explicitly about Mathematics, such as books counting or shapes, other books have Mathematics embedded within a larger context. These books are generally not perceived as “math books”, but Mathematics appears as a natural element within stories, problems, personal vignettes, or cultural events. Welchman-Tischler 2012) has classified the ways to use such books as follows:

1. Provide a context or model for an activity with mathematical content.
2. Introduce manipulative that will be used in varied ways (not necessarily as in the story)
3. Inspire a creative mathematics experience for children.
4. Pose an interesting problem.
5. Prepare for a Mathematics concept or skill.
6. Develop or explain a Mathematics concept or skill.
7. Review a Mathematics concept or skill.

Though any given book could likely be used in multiple ways, the common element in these various approaches is the intent to use literature to provide vicarious experiences based on real problems or situation of interest to teachers and students.

Goals of Mathematics Instruction

Goals for Mathematics instruction depend on one's conceptualization of what Mathematics is, and what it means to understand Mathematics. Such conceptualization varies widely. At one end of the spectrum, mathematical knowledge is seen as a body of facts and procedures dealing with quantities, magnitudes and forms, and relationships among them; knowing Mathematics is seen having "mastered" these facts and procedures. At the other end of the spectrum, Mathematics is conceptualized as the "science of patterns" an (almost) empirical discipline closely akin to the sciences in its emphasis on pattern seeking on the basis of empirical evidence.

Mathematics is an inherently social activity, in which- a community of trained practitioners (mathematical scientists engages in the science of patterns - systematic attempts, based on observation, study,

and experimentation, to determine the nature or principles of regularities in systems defined axiomatically or theoretically ("pure mathematics") or models of systems abstracted from real world objects ("applied mathematics"). The tools of mathematics are abstraction, symbolic representation and symbolic manipulation. However, being trained in the use of these tools no more means that one thinks mathematically that knowing how to use shop tools makes one craftsman. Learning to think mathematically means (a) developing a mathematical point of view – valuing the processes of mathematization and abstraction and having the predilection to apply them, and (b) developing competence with the tools of the trade, and using those tools in the service of the goal of understanding structure – mathematical sense making. (Schoenfeld, forthcoming).

Mathematics is a living subject which seeks to understand patterns that permeate both the world around us and the mind within us. Although the language of Mathematics is based on rules that must be learned, it is important for motivation that students move beyond rules to be able to express things in the language of Mathematics. This transformation suggests changes both in curricular content and instructional style. It involves renewed effort to focus on seeking solutions, not just memorizing procedures; exploring patterns, not just memorizing formulas; formulating conjectures, not just doing exercises. As teaching begins to reflect this emphasis, students will have opportunities to study Mathematics as an exploratory, dynamic, evolving discipline rather than as a rigid, absolute, closed body of laws to be memorized. They will be encouraged to see Mathematics as a science, not as a canon, and to recognize that Mathematics is really about patterns and not merely about numbers (p. 84).

Ways to Teach Mathematics

Effectively

Teachers are bewildered and even hopeless at present time because they find it difficult to teach the Math subject effectively to the pupils. The Basic Education Curriculum is being followed/ implemented in all the elementary schools in our country. Mathematics is the most tested, most evaluated, and most studied subject by the DepEd authorities, aside from Science and English, due to low performance of the pupils in the said subjects.

Guiding Principles in Teaching

Mathematics Effectively

Spitzer (2022) said that in order to teach Mathematics more effectively, instruction should be based on the following basic principles:

1. The children's experiences immediate experiences, give purposes and meanings to their learning.
2. Teach only the meaning facts, procedures and skills that are useful in modern life.
3. Purposes of mathematics should be the following: (a) To develop exact thinking in situations in which consideration of quality is essential; (b) To provide a vehicle for establishing order, system and punctuality (c) To provide pupils with enough knowledge of mathematical processes and business procedures to enable them to solve efficiently the ordinary quantitative problems of everyday life; and (d) To furnish knowledge of development of numbers, weight and measures as basis for better understanding of civilization;
4. Principles governing selection of learning experiences should be the following: (a) Learning through experience (b) Base selection on the nature of the number, (c) The principles of familiarity should be applied and (d) Generalizations are grown out of experience.

The learning of mathematics is not based on one theory of psychology such as conditioning, associationism or Gestalt, but on an eclectic agreement of all theories. The following elements have been found sufficient for a satisfactory psychology of learning according to Fehr (2011).

1. There must be a goal on the part of the student to learn. The student must be aware of this goal.
2. All cognitive learning involves association. Thus a3 means a.a.a. is illustrative of much of the learning in mathematics.
3. Trial and error, approximation and clarification, and analysis are all important in discovering routes to a goal or solutions to a problem. It must not be a hit-or- miss guessing situation but a structural thinking situation.
4. Learning is complete only to the extent to which relationships and their implications have been understood.
5. The learner must be active mentally. He learns what his intelligence is directing him to do.

6. Intrinsic rewards of success and awareness of progress toward a goal strengthen and motivate learning. Punishment and continual failure are deterrents to learning. Praise, success, self-esteem, and status are the best motivation for learning mathematics.
7. Abstractions (discriminating of attributes) and generalizations are essential to effective learning. Mathematics can be learned only in meaningful situations which permit these mental processes.
8. In Mathematics, most new learning is transference of past learning into a reorganization of a new situation. Algebra is generalizing and structuring arithmetic; geometry is generalizing and restructuring space concepts; trigonometry is generalizing and restructuring space concepts; trigonometry is generalizing and restructuring the algebra and geometry; and in all these subjects logic is developed as the structural binder.
9. We learn facts, skills, and understandings, but we also learn "how to learn". The ultimate goal is to project the student through life on his own power to learn.
10. We also learn attitudes (feelings. If unsuccessful, we learn to dislike mathematics and even those engaged in its teaching or research. From happy experience we learn to like the respect mathematics. For all mathematics students: (a) learning is thinking, and good learning is correct thinking, (b) successful thinking is possible at a given level by all students, (c) successful thinking is dependent upon acquired concepts and relationships, and (d) satisfaction from successful thinking provide the highest and most enduring enrichment for the learner.

Role of the Mathematics Teachers'

Competencies and Trainings

In line with the need for teachers to teach Mathematics effectively, Brown and Borko {2020) adopted the guidelines set forth in the 2021 Professional Standards for Teaching Mathematics. Such defined the Mathematics teacher's major roles which are: (1) creating a classroom environment to support teaching and learning mathematics; (2) setting goals and selecting or creating mathematical tasks to help students achieve these goals; (3) stimulating and managing classroom discourse so that students and teachers are clearer about what is being learned; and (4) analyzing student learning, the mathematics tasks, and the environment in order to make ongoing instructional decisions.

His recommendations were the following:

1. More teaching guides and devices, textbooks and references should be provided by the division office.
2. More seminars on the district or division level and demonstration teaching on modern Mathematics should be conducted.
3. Team supervision should be conducted for a better supervision of the different areas.

Tobias (2003) sought to determine the professional profile, level of leading competence and performance of the Grade 5 Mathematics teacher in Bolinao District during the school year 2024-2025 and the problems encountered by them as basis for a continuing professional education program for them.

The descriptive method of research, and documentary analysis were used to gather the data needed. The questionnaire was used as a data gathering tool. The locale of this study was Guimba West District, Nueva Ecija where thirty (30) Grade 5 Mathematics teachers were involved as the sources of data. Among their findings the Grade 5 Mathematics teachers in Guimba West District are wanting in their professional profile in terms of highest educational attainment and in-service trainings attended; and there are common problems being encountered by the Grade V Mathematics teachers that affect instruction and their professional- growth.

