CONFESSIONS OF TEACHERS ON INCREMENTAL MATHEMATICS TEACHING: THEORY GENERATED

NATHANIEL G. GIDO, ALJUN PILONGGO, CYNTHIA DILAG, BRAZIL SANCHEZ and PRISCILLA CANOY

ABSTRACT

In order to build theory, this study looked at the confessions of mathematics teachers. This study took a qualitative approach while also providing quantitative reasons. There were 35 math teachers there from five different schools. There were 27 female teachers and 9 male teachers among the 35 total. They were chosen using a simple random sampling process. Teachers were divided into groups based on their mathematical abilities. A survey questionnaire was employed by the researchers. The TPI was employed as the tool (Teaching Perspective Inventory). The computer generated this inventory. This highlighted the teachers' teaching perspectives as well as the relationship between their beliefs and their teaching or educational practices. This instrument also highlighted how people connect different perspectives or orientations to their ideas, activities, and goals. The researchers also used the Philosophic Inventory, a survey questionnaire. For the creation of the theory, four axiomatic and three propositions were developed. According to the findings, the teachers were specialists in their disciplines. As a result of their altered teaching philosophy and pedagogical skills in mathematics, they adopt unique approaches. The teacher modifies his or her teaching methods, especially if the methods/strategies are ineffective for a certain group of students. Similarly, each teacher has his or her own teaching philosophy and ideas that guide him or her in their chosen field. These ideologies and beliefs are a part of their teacher identities, and they motivate and impact their driving behavior. This has an impact on their work lives as well. These concepts and ideologies do, in fact, influence how teachers organize and order materials in the classroom, anticipate student understandings and misunderstandings, and make instructional and assessment decisions. It is concluded that teachers' opinions and behaviors are influenced by how well they do in class, and students' willingness to learn mathematics influences their learning. Teachers must then innovate in order to establish new teaching styles/methods and effectively achieve the desired desires and goals.

Index Terms- Confession, Incremental Theory, Mathematics Teacher, Philippines, Qualitative Study, Quantitative Explanation, Theory Generated

1 INTRODUCTION

Mathematics ability is a strong predictor of future economic success for both people and society. Technology, the global market, and informed democratic decision-making demand a degree of Mathematics literacy that has never been seen before, but success in Mathematics necessitates more than simply computational ability. It also necessitates the ability to solve problems using mathematics and to process data from many sources and technologies. Indeed, mathematics is necessary for scientists, engineers, surveyors, pharmacists, navigators, and astronomers. In general, mathematics is exact, systematic, and employs abstract reasoning. Mathematics is an important aspect of human life. As he goes about his business, he continuously employs quantity knowledge. His language demonstrates his understanding of comparative relations, measurements, and numbers. McIntyre (2006) referred to this as "practical theorizing" (p. 58), S4.

It is undeniable that skilled professors and instruction are required in mathematics classes. The teacher is, without a doubt, the most important aspect in the education

of children. As a result, he or she is responsible for keeping the torch of knowledge alive. This duty is mostly accomplished in classrooms through teaching-learning circumstances that adhere to criteria outlined in various Department of Education (DepEd) guidelines, rules, and regulations (2008). Low mathematics achievement among students who are impatient in answering mathematical problems is a serious difficulty for today's math teachers. This problem could be solved by introducing new instructional programs, instructional materials, and teaching methods and approaches.

The targeted objectives of mathematics instruction should include achievement in the subject to evaluate the teacher's delivery of positive and effective instruction to students. Teachers must examine various techniques or strategies, activities, and programs that will help them thrive in their work, whereas competency is a significant concern in education, particularly in Mathematics, which was the subject of the study. The students' high performance level indicates excellence in their work. Mathematics is taught in school as part of the curriculum and is used in almost every aspect of life. Mathematics is important in a variety of ways, from everyday counting to mathematics taught in schools to advanced mathematics utilized in research critical to humanity's advancement. It's always been a tool for sharpening the mind. It necessitates the ability to think clearly, systematically, and exactly. It is an important part of the school curriculum. In today's highly competitive world, a strong mathematics background is unquestionably essential for numerous professional prospects and careers. There are numerous factors that influence schooling at all stages of the process. These elements are systemic in nature, stemming from the larger context of the educational system in question, as well as its distinct and cultural history. The teacher's views, which are fundamental to the classroom implementation of mathematics learning and teaching, are crucial. Teachers' mathematical beliefs can be defined as their conscious or subconscious notions, meanings, rules, mental images, preferences, and values about mathematics and the teaching and learning process. It has been established that instructors' beliefs have a tremendous influence on both their instructional techniques and their willingness to alter their classroom practices (Saunders 2003).

Multiple sources of information collected in various situations are used in the appraisal process. Many teachers use observation, work samples, and self-evaluation as tools in the assessment and evaluation process at the elementary level. Observation is the process of carefully considering and analyzing students' and their performance in a variety of situations. Observation is the most essential evaluation strategy used by teachers in the basic education curriculum. Teachers must know a lot about students, their talents, their attitude toward mathematics, and how they learn arithmetic in order to successfully observe and assess based on the challenge presented by the teacher. Students exhibit what they think, know, and can do by participating in a variety of classroom activities that involve real-world application. Teachers can learn a lot about their students by watching them engage in activities like communicating with one another. Teachers who are not used to using observation as a kind of evaluation may be unsure of what they should be looking for. Teachers can utilize the key-stage and specific curriculum outcomes as a foundation for their observations.

In the Trends in International Mathematics and Science Study, the Philippines was placed 36th out of 38 countries in 2nd Year High School Math in 1999. (TIMSS). In

2003, the Philippines placed 23rd out of 25 nations in Grade 4 Math and 41st out of 45 countries in 2nd Year High School Math. The Philippines did not take part in the TIMSS in 2007. Despite curriculum improvements, tutorial facilities, and internet material, national and international assessments demonstrate that Filipino students' math proficiency has not improved. Victories in the Math Olympiad are examples of bright spots. However, they are largely from the country's best Chinese schools. Math is included in both the English and Chinese curricula for these Filipino-Chinese students. Aside from that, many students are exposed early in their parents' enterprises, and they learn to respect Math through social osmosis. The Incremental Theory of Mathematics Teaching covers several studies and literature in this area. Teacher education programs should train instructors to create environments that promote all of their students' development (Darling- Hammond & Bransford, 2005).

A good learning environment is one that celebrates students' strengths and differences, allowing them to exchange and experience varied perspectives (Banks, Cochran-Smith, Moll, Richet, Zeichner, LePage, Darling-Hammond, Duffy & McDonald, 2005). To guarantee that all learners understand, teachers should be able to create and select assignments that are developmentally appropriate and intellectually relevant. The invention and selection of teaching techniques, presenting skills and technology use, learning activities, student groupings, classroom management, evaluation, and instruction materials are all abilities that work as tools to support the learning of such understandings. To ensure continuity of learning experiences for students, teachers must engage with parents, colleagues, and others in the community in preparing the school's instructional program and work together in planning and decision-making within teams, departments, or other educational units (NBPTS, 2002).

To assess their ways of thinking about teaching and learning to teach, teachers require skills and practices for systematic, purposeful inquiry and critical reflection. Teachers, according to Feiman-Nemser (2001), must consolidate a professional identity about their values, acquire reflective skills through collaborative inquiry where they will be able to critically examine their own conceptions with those of others, such as experienced practitioners and educational researchers, in what Hagger and McIntyre (2006) called "practical theorizing" (p. 58), S4. Teachers must have coping and adapting skills such as time management, goal setting, planning, and setting priorities in order for the classroom to function well and enable various types of learning (Darling-Hammond & Bransford, 2005). In order to foster their own learning, students must also be aware of current research and undertake their own study to test new approaches and concepts. Effective teachers reflect on their teaching and model the characteristics they want to instill in their students, such as lifelong learning.

"Teachers must know the subject they teach and understand how to design curricula in light of both students' requirements and the schools' learning purpose," Darling-Hammond and Baratz-Snowden (2005) write (p. 14). They organized teachers' knowledge into a framework, highlighting three interconnected areas between teachers, learners, and content: 1) knowledge of learners and their social development, 2) knowledge of subject matter and curriculum goals, and 3) knowledge of teaching open-mindedness, as well as intellectual capacities such as careful reasoning, logical reasoning, and analytical thinking and problem solving (Darling-

Hammond, 2006). It was also attached to Howard Gardner's Learning Theory, as explained by David Merrill (2000), emphasizing the importance of teachers being conscious of their learning styles, as the majority of them are not. Thus, instructional strategies should be based on the type of content to be taught or the goals of the teaching, as well as the content-strategy interactions, and then learner styles and preferences should be used to adapt or fine-tune these core learning patterns. Finally, independent of the instructional style or philosophy of the instructional circumstance, content-by-strategies interactions (Merill, 2000). The researcher uses the axiomatic method to develop a theory on mathematics teaching in this work.

2 THEORY GENERATION THROUGH AXIOMATIC APPROACH

Axiom 1: Evaluation of one's teaching and student's learning are essential elements of the teaching-learning process.

"Each of us brings a unique blend of factors to any learning scenario," says McCombs (2007) (in McCombs & Whisler, 1997), "hereditary, temperament, experiential history, beliefs, values, and perspectives, abilities, interest, capacities, and needs, etc." "What differentiates high-performing schools are educators' ideas and values, which lead to diverse practices, which, in turn, lead to school greatness," Ferrero (2005) and McCombs (2007) write. Observers or anyone looking from afar may not be able to see these educators' views and ideals because they are not always obvious. They cannot be noticed right away as being efficiently passed on to their students. Most of the time, the consequences of these inner, non-quantifiable characteristics that affect students' performance directly can be seen instantly through classroom interactions and test scores. When considering teachers who are doing a teaching profession, it is important to remember that everyone of them has their own beliefs, as well as their own strengths and shortcomings. As a result, there will be checking and balancing in the classroom. As a teacher, it is our responsibility to assess our students' learning and comprehension based on the learning objectives established prior to the commencement of the conversation. We may examine how effectively our students cope with class discussion and how well they have digested the topics presented by the instructor by using assessments and evaluations. The Sudbury model of democratic education claims that enabling students to learn on their own is effective. This educational approach contends that learning is a process that a learner engages in rather than one that is performed on them. As a result, there are numerous ways to learn without requiring the assistance of a teacher. In his idea of interdependent study, Charles Wedemeyer accepts that learning can take place regardless of the distance or separation between the instructor and the students (Schlosser L.A. & Simonson M., 2006). Carl Ransom Rogers further stated that learning is promoted when the student is fully engaged in the learning process and has influence over its nature and direction. It is so in mathematics teaching, where students have entire freedom to learn when and how they wish (Macarandang, 2009). Traditional teaching methods are still the dominating type of education in many mathematical classes. Instructors employed methods that required them to teach in close physical proximity with the students, and it frequently used the chalk and board approach. Salandanan (2009) describes teachers' roles in this method as topic masters and controllers of the learning environment. According to Moore (2006), communication in such situations is through

human voice, and the student and the teacher, as well as the learner and the other learners, receive rapid, spontaneous, and frequently emotionally motivated education. Teachers, on the other hand, are expected to be evaluated in order for them to understand their own strengths and flaws. In psychology, there is a notion known as the Johari Window, which states that one's personality can be compared to a window with four quadrants. In general, there are two basic goals of teaching assessment in higher education: accountability to stakeholders and improving teaching effectiveness. Higher education is mostly financed by government funding on a local level. It is only reasonable that the government would want institutions to implement quality assurance procedures for teaching and learning, which are the three core roles of higher education, together with research and social services. Other stakeholders, particularly students, would like to have the quality of teaching and learning at an institution scrutinized in addition to the government.

Axiom 2: Teachers vary in their beliefs and philosophy of teaching.

Dewey concluded, "Philosophy's basic goal is that of rationalizing the possibilities of experience, especially collective human experiences; it is practical, not theoretical in intention," according to Garforth (quoted in Dewey, 1996: 16). (Thomas, 2007). In his progressive education, Dewey (1938) stated that it is necessary to recognize the unique skills of each learner and to build circumstances in which those talents might be realized. Returning to the axioms stated above, teachers should create experiences that allow students to engage not only cognitively, but also emotionally, imaginatively, and socially. 2007 (McCombs). A teaching philosophy is a self-reflective declaration of your teaching and learning principles. In addition to broad remarks, your teaching philosophy should include concrete examples of what you do or plan to do in the classroom to demonstrate how you put your views into practice (Markman 1989). According to Gardner (Smith, 2005),

"I want people at the end of their education to understand the world in ways that they couldn't have understood at before their education. In speaking of world, then I mean the physical world, the biological world, the social world their personal world as well as the broader social and cultural terrain."

Teacher philosophies are usually one to two double-spaced pages long, although they can be longer or shorter depending on your needs. They are aimed at two distinct audiences. The first is search committees, which are increasingly include teaching philosophies in academic job applications. Your second audience is you and your coworkers. The teaching philosophy has a formative purpose in this case, as a document that aids you in reflecting on and improving your teaching. Starting a teaching philosophy can be challenging, but it doesn't have to be. This tutorial's steps give a framework for walking you through the procedure step by step. Naturally, there are as many ways to write teaching philosophy as there are writers. Markman (1989) in the field of language development is another line of research that supports this viewpoint. "Very young infants can create object categories that are so stable, available, habitual, and familiar that they gain exceptional status," she claims. These fundamental categories are resistant to change. It's probable that some of the basic "concepts" about justice, learning, and even teaching that all learners acquire are learnt early and, as "basic concepts" in Markman's language, are difficult to change. I

have collected a number of "autobiographies" from first- and second-year teachers at the University of Delaware, in which they describe their first awareness of teaching as a prospective career. It's interesting how many people say they "love to teach" at the age of six. Here is a scenario that reflects many others: When I got home from first grade, I would line up all of my dolls as students in my bedroom. Then I had teach them something. I adored teaching, and it was made much better since my dolls were so perfectly behaved." In this way, this teacher and several of her colleagues "learned how to teach." It is probable that early-life teaching beliefs were related to a sense of self and served as "foundation" in Markman's definition, making them extremely difficult to modify. Tattoo's seminal work on beliefs concluded that "lay cultural norms[beliefs] among enrollees [in teacher education] are deeply ingrained, and that most teacher education, as it is currently structured, is a weak intervention to change particular views regarding the teaching and management of diverse learners." With this proviso in mind, it is time to revisit the tools at our disposal. Every individual is distinct. Everyone has their own set of views and values. These variances are what give us our distinct personalities, and our personalities may reveal who we are. Several factors influence teachers' perceptions and attitudes regarding teaching. These aspects are ascribed to the individual's previous socialization, whether it was political, social, economic, or spiritual. There are various levels or degrees of civilization; the first is the house or family; everyone begins with the most fundamental unit of society, the home. Every individual's character development is influenced by their home environment. At home, we learn our first set of ideals and exercise proper etiquette based on the family's traditional traditions. In any case, our first move towards oneself begins at home. The school is the second degree; when we begin our education, we have this so-called extended family, which is the schools. Because this is where we learn the formal stuff, the teachers become our second parents, and the school becomes our secondary home. Who we are today is a reflection of our prior teachers. The society is in the third degree, followed by the media, and so on. These levels of socialization create our personalities, and they determine our identity, beliefs, philosophy, ideals, and point of view.

Axiom 3: Teachers use different strategies or methods and modalities in teaching.

In his work, Ravi (2011) emphasizes the need of having an adequate teaching philosophy for instructors to thrive in their classroom duties. Ravi emphasizes the importance of teachers' personal philosophy in his writing, stating:

"In the absence of an adequate philosophy of life, the method of teaching followed by the teacher may repel the students from the subjects. It is therefore that there is a close relationship between philosophy and method of teaching. Every teacher is a philosopher, and as such, formulates his own methods of teaching according to his own philosophy. As one's philosophy changes, methods of teaching also changes."

McGee (2006) offered her teaching philosophy on the internet and demonstrated how it influences both instructor performance and learner ability to assimilate information. She said that students learn best when they are given enough time to think about their own views, experiences, products, and so on. If they are given this opportunity, they

can learn more about themselves, their world, and anything else that is important to them.

"Furthermore, she stated, that the best teachers are likewise the ones who reflect on the type of environment they are creating in class, and for them to constantly think of the answer to these questions: Are my techniques working? Am I incorporating materials which my students can relate? Am I flexible?''

To assess their ways of thinking about teaching and learning to teach, teachers require skills and practices for systematic, purposeful inquiry and critical reflection. Teachers, according to Feiman-Nemser (2001), must consolidate a professional identity about their values through collaborative inquiry, where they will be able to critically examine their own conception with that of others, such as experienced practitioners and educational researchers, in what Hagger and Mcintyre (2006) referred to as practical theorizing. The largest obstacle for helping teachers grow and be more effective, according to Palmer (1999) (in McCombs, 2007), is "to provide teachers with appropriate assistance to reflect on questions worth living and sharing with their students." Furthermore, according to Kochhar (1987), teaching should connect learning to living. Learners should not be taught in bits and pieces, but rather should see each learning experience as an opportunity to learn more about life. Teachers require coping and adapting skills such as time management, goal setting, planning, and setting priorities in order for the classroom to work well and support various types of learning (Darling – Hammond & Bransford, 2005). They also need to be aware of current research and undertake their own study to develop innovative approaches to their teaching and model the characteristics they want to instill in students, such as lifelong learning. Teachers are all the same, yet their tactics differ. Even with a curriculum and a regular course outline, a teacher cannot simply follow the textbooks. It is impossible to avoid a teacher improvising on what he thinks is appropriate.

"Even though some of us might wish to conceptualize our classrooms as culturally neutral or might choose to ignore the cultural dimensions, students cannot check their sociocultural identities at the door, nor can they instantly transcend their current level of development. Therefore, it's important the pedagogical strategies we employ in the classroom reflect an understanding of social identity development so that we can anticipate the tensions that might occur in the classroom and be proactive them"

In a diverse class with students from various socio-cultural backgrounds, inclusive teaching practices are frequently used. This guarantees that the intended goals are met in a multicultural manner. Teachers must respond to students according to their learning styles in order to make information processing easier and more enjoyable for them. As an alternative to traditional teaching methods, teachers can use media and other visual materials and representations. According to Eisner (2002), teaching is a caring activity. The development of awareness and a sense of connectivity is the responsibility of teachers. In particular, the care that involves students in deliberate academic learning, as well as the support and care that they receive (Le Page, Darling-Hammond Aka, Guiterezz, Jenkins- Gunn & Rosebrock, 2005). Korthagen (2001) argues that it is the responsibility of teachers to guide students in this crucial element of life. Collaboration promotes moral support, boosts efficiency, improves

effectiveness, lowers overload, establishes /boundaries, encourages confidence, promotes teacher reflection, promotes teacher learning, and leads to continuous development, according to Jonhson (2003) in his study on collaboration.

Axiom 4: Teachers can innovate and adopt new trends of teaching.

Students' experiences should be well-planned to encourage learning, according to Sauvageau (2008), as mentioned in his journal entry. He went on to say that student-centered teaching and learning is critical, particularly when compared to teacher-centered teaching and learning. The teacher, not the student, the parents, or the administrator, is the most critical determinant in classroom success, according to Bright (2012). He also added five crucial behaviors for effective instructors in his piece, in the hopes that they help them advance in their chosen career.

"First, teacher should take a wider view of student's success which is not just limited to the academic performance but more in helping the students do well in life. Then, they should recognize instruction as a performance, which means that, mastery of content should be given enough preparation for a teacher to be able to perform well in front of the students. Next, they should internalize personal accountability for students' performance and not pass the blame for any failures to anybody. Then, they should understand the importance of student's motivation. This will be made possible if tasks are doable and important in the perspective of the students. And lastly, that teachers should continue to focus on instructional improvement like creating innovations in class."

It is necessary to cultivate an openness to new trends, methods, and attitudes. Caldarella, Page, and Gunter (2012) emphasized the need for educators to be aware of the types of learners available these days in order to address the need for holistic development of the new breed of learners known as "digital natives." Caldarella and colleagues defined the new breed of students as those who have grown up in a world of television, computers, and video games and are inherently visual. Quinones (2009) concludes in her thesis that teachers must be assisted in learning new responsibilities and teaching practices in order to improve students' academic progress. Teachers nowadays are not like those in the past. They are shaped to be adaptable, innovative, and creative, and their education incorporates technology. It is clear that people have a basic desire to feel linked to or related to others. Students who feel like they "belong" in an academic setting have more motivation and academic confidence, according to study. According to students, a teacher who exhibits warmth and openness, encourages student participation, and is organized and prepared for class fosters their sense of belonging (Freeman, et al., 2007). Increased student interest, engagement, and performance can be fostered through a supportive teaching style or motivational method that allows for student autonomy. Listening, providing clues and encouragement, being attentive to student inquiries, and displaying empathy for students are all examples of supportive teaching conduct (Reeve & Hyungshim, 2006). Previously, teachers primarily used traditional teaching methods such as manila papers and calendars as visual aids. Teachers nowadays use current teaching methods, such as using Power Point presentations with projectors during discussions, and asking students to upload their assignments, reports, and projects online. As an

educator and a teacher, I also follow current teaching trends in mathematics, such as concentrating on students' learning outcomes, having a better and varied teaching style, and assessing students' progress. Student engagement is the new slogan these days, with the more students engaged, the more learning occurs. Educational technology is a two-semester course in college. Different technical advancements are now being addressed in this area, as well as how to deal with them. Teaching is never hampered by innovation; in fact, it is encouraged in order to keep students engaged in the subject. What was fashionable in the 1970s is no longer fashionable today. Especially with the 21st century's technical breakthroughs. Teachers must adapt to technological advancements because if they do not, they risk living in the past and losing their students' interest. A skilled teacher understands how to research and deal with changing trends. Age is never an excuse for not learning how to use technology. There are no logical reasons for the instructor not to learn to innovate and adapt to trends if the students can. There is something called the cone of experiences in education technology (Dale, 1946). The Cone was created in 1946 by Edgar Dale and was designed to depict distinct learning processes. The diagram to the right (Raymond S. Pastore, Ph. D) is a recent modification of Dale's original Cone; the percentages indicated relate to how much people recall. The Cone essentially depicts the progression of experiences from the most concrete (at the bottom of the cone) to the most abstract (at the top of the cone) (at the top of the cone). It's worth noting that Dale never intended the Cone to represent a value judgment of experiences; in other words, his thesis was not that more concrete experiences were preferable to more abstract ones. Dale believed that depending on the learner's needs, any or all of the approaches may and should be applied. Because the cone of experiences has many levels, a teacher can base his or her lessons on the goals he or she has set for the class. If a teacher wants his or her students to learn how to solve problems in math class, demonstrate them the concepts of problem solving. Instead of reading books in history class, a thousand times, a film will be shown; this is an example of a teacher innovating and adapting to available technology (Kearsly, 2011).

3 THE PROPOSITIONS

Based on the axioms above, the following propositions are generated:

Proposition 1: "Teachers change their strategies based from their evaluation of the teaching – learning process."

This assertion goes hand in hand with the first axiom. Teachers should be able to be adaptable in their teaching methods and procedures, according to the proposition. They must be adaptable to the classroom atmosphere. There is no guarantee that a teacher work with the same group of students throughout his or her career. As a result, one must be willing to adapt their method depending on how their students are evaluated as well as how they internalize and grasp the lesson objectives. There is no perfect approach for teaching because every class is different based on the teacher and the students, hence one must be able to adapt to various strategies in order for the class to attain optimal learning. The measure of a teacher is not how adept he or she is at changing tactics and reacting to the class when it is necessary. Assessment is an important component of differentiated teaching since it aids in the identification

of the most successful tactics and activities for promoting student learning. While generally assumed to occur at the end of the learning process (summative assessment OR learning assessment), it can also occur during the learning process, incorporated in the instruction. Teachers' teaching tactics are determined by the topic they wish to teach, the students they are instructing, and the desired degree of competency. They adjust to their students' shifting learning capacities during a class and make changes as needed. Teachers must first determine what needs to be addressed and study how these elements affect their teaching style before modifying a teaching technique. These elements might be noticed either inwardly or extrinsically through his or her own assessment. A teacher, for example, frequently administers a Morse exam. He or she may change the type of exam if he or she notices that the students are having difficulty answering the questions. If a visible improvement is not seen after adjusting one's strategy, another modification is required. As a result, there is no doubt about strategy shifts that occur from time to time.

Proposition 2: Teacher's strategies of teaching are based on their beliefs and philosophies.

Axioms 2 and 3 express the genuine belief that teachers use a wide range of activities in their lessons. We can be sure that at least some of the time, we will be able to accommodate learners with varied learning styles. Human people, like our fingers, are not equal nor are they the same when it comes to stuff. One man's meat is another man's poison," and that is how we see life. Teachers now differ in their teaching views and philosophy because, despite doing the same job or profession, they are not all the same. Teacher A is not teaching math in the same way that teacher B teaches math. Teachers try to read their students and find the best technique to teach them so that they can learn and grasp what they have been taught quickly. Some teachers believe in being harsh with their students, while others believe in being pleasant. Some people are not only teachers, but also friends, advisers, and other people. It is entirely dependent on the teacher in question. Visual learners may benefit from teachers' use of wall display posters, flash cards, graphical organizers, and other visual aids. In addition to audio recordings and movies, teachers can employ storytelling, music, jazz chants, memorization, and drills to teach students with auditory learning styles. Physical exercises, competitions, board games, role play, and other modalities are used to teach students with kinesthetic learning styles. Modalities in teaching for students with a tactile learning style include board and card games, demonstrations, projects, and so on. The researcher does not need to be asked or required to be asked; rather, he does or contributes something to help achieve the objectives. He goes to public schools in Cebu City on his own time to observe the teaching approaches of mathematics professor. Modern educators do not rely solely on their prior knowledge. They experiment with various teaching methods, tactics, and modalities. They must adapt in response to students' issues or suggestions, allowing the students who made the suggestions to benefit from them. Teachers now employ (TBL) Team-Based Learning, which combines large-group (classroom) and small-group approaches, as well as classroom demonstrations, games, and quizzes. Being a college instructor necessitates having a critical mind in order to choose a strategy/method/modality that best suits my abilities and aptitude as a teacher in order to address learning to my students in the field of mathematics.

Proposition 3: Teachers innovate based on the results of the evaluation of one's teaching.

Axiom 4 emphasizes the significance of developing, innovating, and implementing innovative teaching methods. It demonstrates that a good teacher is also a good communicator, and a good communicator is someone who can not only speak but also listen. Because teaching is a two-way learning process, it is necessary to conduct evaluations from both students and stakeholders. A competent teacher understands that the students' concerns must also be addressed, thus he or she should not overlook the remarks made by his or her students during the evaluation process. When it comes to invention, a person's creativity is the only limitation. Innovative methods are limitless, and they can be achieved if a teacher has the skill and foresight to adapt instructional practices. Several people have received international recognition for their innovations and have had a significant impact on society. Alfred North Whitehead, for example, gained famous for his quote "Ideas do not last." "A good and effective teacher must put his or her thoughts into action." After all, Miles Davis once said, "Do not be afraid of mistakes." There are not any. Teachers must prioritize innovation since it assures that students are able to innovate their own learning. If difficulties come, rise to the occasion. "You cannot solve an issue on the same level that it was created," Albert Einstein reportedly observed. To advance to the next level, you must climb above it. "So this can only indicate that the greatest intellect who ever lived faced obstacles, but his ingenuity helped him to overcome them." However, no matter how we think about it, there are always be teachers who lack the ability to adapt, be flexible, and create. These teachers become the type of teachers who retired with nothing on their minds but their wages, and they have less enthusiasm for teaching. These types of teachers convey the idea that the teachers are terrorists to the children. Beyond the blackboard and his chalk, we must constantly move. A personal touch to the courses is more innovative than simply following the book's instructions. If, for example, students complain that their teacher is dull, a good teacher would come up with creative ways to prove his students wrong. Energizers, demonstrations, exhibits, and other interactive items can be used to keep students' attention. To paraphrase these lovely words from a great mind pushing instructors and anyone who wants to stay current:

> "We cannot afford to walk when we are expected to run, or leap when we are expected to pole vault; we need to continue running lest the rest of the world pass by. We cannot slacken our pace because the race for quality is one with no finish line."

These reflective lines encourage everyone to learn, adopt, and create instructional learning processes, as well as acquire more information, because people with the most information are more likely to succeed in life. Teachers' professional development has an impact on successful classroom instruction. "You cannot give what you do not have," as the saying goes, thus teachers should be more advanced

than their students. The quick rate of change in education and its system, as well as the rapid obsolescence of knowledge, necessitates a never-ending quest for knowledge and updating of the teaching profession in order to respond to changing needs of teachers and the community.
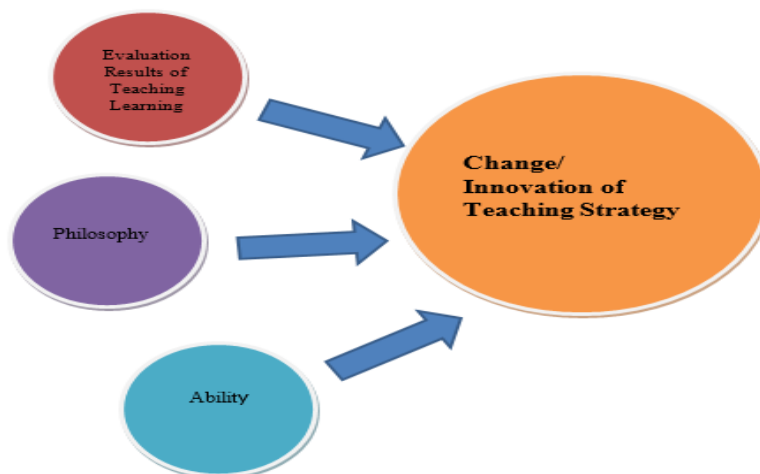

Figure 1. A Simulacrum of the Incremental Theory of Mathematics Teaching

4 THEORY GENERATED

This incremental theory of mathematics teaching was developed based on the principles, and it states that teachers opt to adapt their teaching technique after evaluating their teaching – learning process. Furthermore, based on their teaching philosophy and pedagogical skills in mathematics, they alter and employ novel tactics. The teacher alters his or her teaching approaches, particularly if the methods/strategies are ineffective for a certain group of students. Similarly, each teacher has his or her own teaching philosophy and beliefs that serve as a guiding principle in his or her chosen sector. These beliefs and philosophies are a part of their teacher identities, and they serve as a motivator and influence their driving behavior. These influences their professional practice as well. Indeed, these ideas and ideologies have an impact on how teachers organize and order resources in the classroom, anticipate student understandings and misunderstandings, and make instructional and assessment decisions. Their views and philosophies influence how they plan, create goals, evaluate objectives, and make curricular decisions, determining what should be taught and how education should be delivered. Figure 1 illustrates the theory.

Conceptual Framework

The researcher developed his framework out of a personal desire to find links between instructors' educational philosophies, viewpoints, and practices, as well as their actual teaching performance. Furthermore, the requirement to determine whether their ideologies served as the foundation for their activities added to the study's

conceptualization. Humanism, constructivism, cognitivism, and progressivism are examples of educational philosophies based on ancient philosophies that were analyzed and checked to see if they correspond to their day-to-day experiences, which were further evaluated through classroom evaluation. Every individual has their own life philosophy, and instructors are no exception. Every teacher has their own philosophy that guides them through the problems they face in the classroom. Knowing how one's thought fits into any of the aforementioned major educational philosophies is at the very least promising. At the very least, their educational views and values are well-founded. As a result, understanding one's learning styles can help students become more self-aware of their own strengths and weaknesses. In other words, pushing learners to comprehend their own and others' learning processes can provide all of the benefits claimed for being aware of one's own thought and learning processes (Coffield, 2004). Students' expectations of what a Mathematics classroom is linked to these concepts. If the teacher tries some new activities, the students' reactions may become obvious or furtive, thus impeding the learning process.

5 METHODOLOGY

The information for this study was acquired from 35 mathematics teachers from five 5 schools. There were 27 female teachers and 9 male teachers among the 35 total. They were chosen using a basic random sampling method. These educators were divided into groups based on their expertise in teaching mathematics.

Table 1   Total number of Respondents (35)

NAME OF SCHOOL	TOTAL NO. OF TEACHERS
A National School	10
B National High School	7
C Science High School	4
D National High School	8
E Night High School	6
Total	**35**

Table 1 above shows the demographics of the respondents. The researcher employed a survey questionnaire for the teacher in this study. The TPI (Teaching Perspective Inventory) was the primary tool employed. This is a computer-generated inventory. This highlighted the teachers' teaching viewpoints while also determining how their ideologies are linked to their teaching or educational approach. This tool also revealed how they link their views, actions, and goals to each perspective or orientation. There are 45 items on this instrument. The scoring and explanation of the results were done by computer. Teachers' viewpoints were divided into three categories: dominant, backup, and recessive. Each teacher's results include all three areas. One or two dominant viewpoints are possible.

6 RESULTS AND DISCUSSION

The teaching views inventory displays the teachers' teaching viewpoints. This is based on Collins and Pratt's teaching perspectives inventory. This tool contains 45 items that are intended to assess the dominant and backup perspectives.

Table 2

Teachers' Teaching Perspectives Inventory

N- 35

Teaching Perspectives	Dominant Perspective	%	Back-up Perspective	%	Total
Apprenticeship (Constructivist)	18	51.43	5	14.29	35
Nurturing (Humanist)	8	22.86	11	31.43	35
Transmission (Essentialist)	3	8.57	8	22.86	35
Social Reform (Social Reconstructivist)	4	11.43	6	17.14	35
Development (Progressive)	2	5.71	5	14.29	35

The table demonstrates that Apprenticeship Perspective dominates the majority of high school mathematics teachers (18 out of 35, or 51.43 percent). This just serves to demonstrate that the teachers are experts in their fields. They see themselves as teachers for the talents they want the students to master. The 18 Apprenticeship teachers have a tendency to let students develop as autonomous learners on their own. With the teacher's help gradually removed from the learning scenario, their students are given more problems and responsibilities as they progress. According to Collins and Pratt (2002) … "effective teaching is a process of socializing students into new behavioral norms and ways of working". Donna Qualters (2002) explained the Apprenticeship Perspective in her article. She based her piece on Collins and Pratt's work, which she presented in simpler terms. Teachers strongly believe, according to her theses, that **"**learning is facilitated when learners work on authentic tasks in real settings. These teachers don't just build skills but also transform learners' abilities to acculturate them into a profession". In most circumstances, developing authentic assignments in the classroom is not always achievable. Some lessons may only involve classroom discussion and the use of visual aids. Even yet, designing a course with authentic assignments may take effort and ingenuity from teachers. As a result, most teachers simply encourage authentic practices or turn to project-based tasks to present students with another stimulating activity. These simulated tasks are sometimes presented as a group activity. Because the students we're working with are in high school, they are usually done as a result of classroom conversations. Even if the teachers' focus is on actual skill practice in a real-world situation, where students are encouraged to be as independent as they should be, they are constrained by the

students' age, level, and prior experiences. They are, in fact, always there to guide and aid them so that they might achieve success and satisfaction in their work. While the majority of teachers have an Apprenticeship orientation, the back-up perspectives come under the Nurturing Perspective, which includes 11 or 32.43 percent of all participants. This could explain why they have a nurturing attitude. It is encouraging to know that there are teachers who can create a positive learning atmosphere by developing students' desire to learn. However, according to Donna Qualters (2002), these teachers frequently devote too much of themselves and burn out or overlook other crucial tasks. The Transmission perspective is the second backup viewpoint. This viewpoint is held by 8 teachers, or 22.86 percent of the total participants. This is in contrast to the nurturing perspective, which is more teacher-centered and content-oriented.

Table 3

Classification of Teaching Perspectives

Classical Philosophy	Frequency	Percentage	Mode
Apprenticeship	20	57.14	
Nurturing	7	20.00	
Transmission	3	8.57	Apprenticeship
Social Reform	3	8.57	
Development	2	5.72	
Total	35	100	

Apprenticeship teachers (57.14 percent) favor constructivist approaches because they allow students to reconstruct their experiences using actual or simulated activities in order to learn new things, as indicated in table 3. They are then coached in order to put their new talents into practice. Nurturing instructors (20.00 percent) are more focused on humanistic methods because they are concerned with the cognitive, social, and psychological needs of their students. High school teachers must be nurturing if they want to succeed with their very young students. Transmission-oriented teachers are essentialists who are more concerned with transmitting content. They usually concentrate on specific topics and abilities, and students are expected to study them as thoroughly as possible. They are less concerned about their students' social and psychological requirements. These instructors are not well-suited to teach in the lower grades. Teachers that are interested in social reform concentrate their efforts on bringing about social change. They are the social reconstructivists, and their lessons serve as a medium for their main concern: humanity's ultimate good. Progressivists are teachers who have a development mindset. They attempt to improve higher-order thinking skills and arrange their classes around the diverse learning styles of their students. I quote Pratt (2002) when he says, "perspectives are neither good nor bad, they are simply philosophical orientations to knowledge, learning, and the role and responsibility of the teacher."

Table 4

Philosophic Inventory Profile

N = 35

Educational Philosophies of Teachers	Frequency	%	Descriptive Equivalent
1. The best teachers encourage personal responses and self- awareness of their students. (Humanistic)	21	60.00	S.A
2. Teachers should create an environment for student's experiences. (Constructivist)	18	51.43	S.A
3. Education results from exposure to great works in humanities. (Humanistic)	25	71.43	A
4. Learning should involve students in social reform. (Humanistic/Social Constructivist)	24	70.00	A
5. Good teaching results to a supportive environment for Learning. (Humanistic).	22	68.57	A
6. Students should choose what and how they should learn. (Humanistic)	22	68.57	A
7. Because of our unformed personality, personal growth should be the focus of education. (Humanistic)	20	56.67	A
8. Education should provide democratic activities and chances for reflective thinking. (Democratic School Theory/Constructivist)	20	56.67	A
Mode			A

Legend:
SA- Strongly Agree   SD- Strongly Disagree
A- Agree   DE- Descriptive Equivalent
UN- Uncertain   F- Frequency
D- Disagree   %- Percentage

Parkay's Philosophic Inventory was used to assess teachers' teaching philosophy. Only those elements in the inventory that were agreed and favored by 50% or more of the respondents were included in the analysis, assuming that they represent the median or majority of the instructors' responses. Table 4 above shows the eight elements that the teachers prefer. Every item is interpreted using classical philosophies in order to determine the teachers' educational beliefs and attitude. The frequency with which teachers adhere to the items in the Philosophic inventory is shown in the table. Two of the items were marked as "strongly agree." The first received 21 out of 60 participants, or 60.0 percent, who expressed humanistic tendencies. The second has 18 (51.43%) of the votes. These 15 participants exhibit some patterns in their behavior. Looking at the responses, it can be readily seen that

majority of the respondents are more guided by the Humanistic and Constructivist Philosophies in their teaching. Those with educational belief on the humanistic philosophy tend to view learning as a personal act to fulfil one's potential. Humanism emerged in the 1960's and focuses on human freedom, dignity, and potential. Huitt (2001) posited that the central assumption of humanism focuses on the fact that people act with intentionality and value.

Table 5

Classification of Teachers' Philosophic Inventory

Classical Philosophy	Frequency	Percentage	Mode
Humanistic	23	65.71	
Constructivist	8	22.86	
Essentialist	4	11.43	HUMANISTIC
Progressivist	0	0.0	
Total	35	100.0	

If these teachers who are more humanistic in their outlook employ this belief in their teaching, they should be concerned with the overall development of the person. This is especially important as the person matures and evolves throughout time. As topics of particular interest in this humanistic philosophy, the study of the self, motivation, and objectives should be pursued. Learning is student-centered and personalized in humanism, with the teacher acting as a facilitator. In a supportive and cooperative setting, students' affective and cognitive needs are satisfied. The ultimate goal is to create self-actualized people who are proud of their abilities. Pupils that grow up in this type of setting are socially competent and innately nice. Furthermore, these professors believe that great works in the humanities can help students develop their values and attitudes toward themselves and others. (L. Cohen, 1999). Democratic School Theory, Social Reconstructivist, and Essentialist are three other ideas that may not be as popular as the first two. Essentialist teachers are those that are just concerned with basic skills and do not consider providing students with a variety of possibilities to explore their abilities. They are rigorous disciplinarians who do not accept unproductive behavior or unmotivated attitudes from students. This philosophy is based on a particular concept known as "common core knowledge." This is also one of the pillars of the education policy "No Child Left Behind". Furthermore, with this sort of classroom orientation, students are often assessed intellectually by testing. M. Bayla, July 2007.

Essentialism is a teacher-centered worldview in which the teacher assumes the role of leader and takes center stage. Although students in this type of atmosphere tend to be passive, it does have some positive aspects. The disciplines are heavily emphasized in a conventional kind of schooling. Education is constant and solid because of the strong emphasis on disciplines. Constructivism and The Democratic School Theory both make use of reflective thinking activity to reorganize man's experiences. Perception of relationships in everyday situations, combined with

reflective thought, allows one to grow and learn about one's own reality. This may be achieved if a student is given the opportunity to participate in meaningful learning activities rather than merely memorizing data. (Dewey, undated). Democratic education is a paradigm of learning and school governance in which students and staff in a democratic school participate equally. In a democratic school, students and teachers often make joint decisions on issues such as living, working, and learning together. (n.d., en.wikipedia.org). Dewey also felt that pupils should be able to witness democracy in action in the classroom. Democracy is a way of life that encompasses all types of society, not just politics. In order for students to be productive members of society, education should be concerned with presenting them with the real practice of democratic ways. (Dewey, n.d.). Constructivism is a psychological revolution in education. Constructivists highlight the necessity of learners actively participating in their own knowledge construction. Students engage in critical thinking and make sense of their personal experiences. Self-directed learning, transformational learning, experiential learning, discovery learning, collaborative learning design, project-based method, and hands-on action are all examples of constructivism. Whatever approach a constructivist teacher chooses, the emphasis will always be on encouraging students to explore freely within a framework or structure. The teachers admitted that their educational theories are based on existing educational philosophies. Each of these concepts has the potential to have a significant and beneficial impact on educational methods. Examining teachers' differing perspectives on their teaching approaches. I believe that pupils in a school with these professors are given the opportunity to be exposed to their various orientations. Personally, I cannot claim which ideology is superior to the other. Each has its own set of advantages and disadvantages. Each teacher should understand where one's good intentions should end and where they should begin. Students will develop a positive self-concept and self-esteem if a teacher with a humanistic leaning is always felt by the students. However, some students may not find this successful because they require a different approach to meeting their requirements; in this case, the instructor must adjust and be adaptable. If a teacher is required to give teacher-directed activities and teacher-prescribed classroom challenges in order to motivate students to learn, the teacher must do so. If self-directed learning is not possible, the teacher must find other ways to help students learn. If being an essentialist is the sole option, the instructor must modify his or her approach to fit this ideology. The results of the two survey questionnaires indicated the thirty teachers' shared pedagogical perspectives. The reactions of the teachers could very well be linked to the well-known classical ideologies that educators are familiar with. As evidenced by their views, they can be classified primarily as humanistic and constructivist. Other philosophies, such as essentialist and social re-constructivist, can be used to classify some of their replies. Although democratic school theory is in the classification, I do not think I need to say it is inferior to the others because it is more accurately defined as humanistic.

TEACHERS' TEACHING PRACTICES INVENTORY

Drummond's "Best Instructional Practices" survey was used to assess the teachers' teaching methods. The survey contains 34 items, but only 14 were used in the analysis because these were the only ones that teachers used consistently and frequently in their classroom activities. The median of 50.0 percent or more of the replies was used

to determine which would be included in order to assess whether these practices are being implemented by the majority of the teachers. Teachers' comments revealed that they had a variety of educational ideas that scaffold their teaching approaches, as seen in the table. Essentialism, Humanism, Progressivism, Constructivism, and Behaviorism are some of the classifications. According to the data, three of the practices are rated as "always" practices by the teachers. The first item, which specified the sort of test they always administer, was favored by 17 teachers (56.67%), whereas the next two teaching techniques revalued as "always" were both favored by 16 teachers (53.33%). Essentialist, humanistic, and progressivist practices are read as the first three items with the descriptive equivalent of "always." Around half of the thirty participants in this study used a blend of the three philosophies in their teaching practices, including the learning environment and how they formulate questions.

Table 6
Teaching Practices Profile of Teachers
N- 35

	Teaching Practices of Teachers	Frequency	Percentage	Descriptive Equivalent
1.	Give objective type and essay exams. (Essentialist)	23	65.71	A
2.	Have a supportive environment for learning. (Humanistic)	21	60.0	A
3.	Ask higher order thinking skills. (Progressivist)	20	57.14	A
4.	Be clarified of a comment without giving it personal teaching. (Humanistic)	21	60.0	O
5.	Specify teachers' responsibility & those with mutual concerns in class. (Humanistic)	20	57.14	O
6.	Talk in 7-10 minutes, segments, pause, ask questions. (Essentialist)	21	60.0	O
7.	Use simulations and games in class. (Constructivist)	22	62.86	O
8.	Motivate students to learn how to learn through their mistakes. (Humanistic)	18	51.43	O
9.	Show the emotional reaction to express genuine feeling. (Humanistic)	19	54.29	O
10.	Allow each student to express own point of view on a given topic. (Constructivist)	22	62.86	S
11.	Detail a students' action immediately as it occurs. (Humanistic)	22	62.86	S
12.	Allow reading of brief assignments. (Constructivist)	19	54.43	S
13.	Talk about your prior experiences. (Constructivist)	19	54.43	S
14.	Avoid giving praises. (Behaviorist)	18	51.43	N
	Mode			O

Legend:
A- Always   4pts.   N- Never 1pt.
O- Often   3pts.   PE- Point Equivalent
S- Seldom   2pts.   DE- Descriptive Equivalent

The seven items are made up of the following practices that participants deemed "frequently" practiced. The first category, which claims that they frequently clarify the meaning of comments without personalizing them, had 23 participants (or 65.71%). They also claim to differentiate responsibilities in class, which received 21 percent of the vote (60.0 percent). Twenty percent of participants, or 57.14 percent, like the third item in this category. The next two elements, simulations and games, as well as motivation, are frequently used by 18 or 51.53 percent of teachers. The final two items are preferred by 19 (54.43 percent) of the teachers as being frequently practiced. The teachers classified the next set of items as practices they "rarely" do in their classes. The first item in this category is that they rarely detail on students when something happens, and 22 of the teachers, or 62.86 percent, agree. The following two items in this category are preferred by 22 teachers, or 62.86 percent. These methods apply to how they handle assignments as well as their capacity to incorporate previous experiences into their teaching. Finally, the teachers state that they never fail to commend their students. As a result, they never fail when given the opportunity. This is claimed by 18 teachers, or 51.53 percent, as part of their instructional methods. The results of the teachers' philosophic inventory and instructional viewpoint inventory are very well aligned with their teaching methods. When you look at the main teaching methods, you can see how well they fit into their beliefs. They have a strong preference for humanistic and constructivist practices. When employed correctly, a solid blend of different beliefs always benefit the students. Each person has diverse life views and values, which combine to form the type of person they are. Nobody can claim that their life decisions are based on a single ideology or idea. This can be shown in how participants rated their daily teaching activities.

Results from the first interview:

Teacher 1: As a teacher I believe that all my students, whether top performers or low performers will someday have the determination to succeed in life.

Teacher 2: As a teacher I don't merely impart knowledge and skills, but I also inculcate values in every lesson I have. I believe that values inculcation gives more meaning to the academic offering. This will also give me the confidence that I am helping my students to become effective and well-educated individuals.

Teacher 3: I believe that the young learners I have are eager to learn. They even mimic their teachers especially if there is something that fascinates them in the classroom. That's why as a teacher I have to be careful in giving them the right modelling or they might follow some undesirable traits.

In imparting the lessons, I believe that through constant practice and drills will help them develop certain skills fast and quick. Making the lessons meaningful will also make my learners become more interested.

Teacher 4: My role as a teacher is to coach my students and facilitate learning in order for them to achieve their goals. I should be able to provide them with a conducive place for learning where there is respect instead of fear. I should promote growth by stressing to them the importance of education. Since every student is unique, this uniqueness should be respected in my class.

Teacher 5: To be effective as a teacher, I believe that I should be concerned in making them feel comfortable in my class. I should also involve my students by providing them with a lot of opportunities. Group activities and wholesome interaction between teacher and student, student and student should be an avenue for them to express themselves freely.

To collect further information on teachers' teaching beliefs, how their students learn, how they view their students as a group, how they perceive the subject they are teaching, and how they make their students learn from their subject. The second interview was performed by the researcher. The participants were asked five questions by the researcher during the interview. The participants were asked to summarize their responses on the supplied forms after each interaction to aid the researcher in data tabulation. Despite the short notice and the disruption to their normal school routines, the teachers were exceedingly helpful and did not show any resistance. During our informal discussion, I saw that the teachers were spontaneous in their responses and that they were serious in their responses. Five distinct tables show their responses and the frequency of each response. Each table displays the answer to each question. Some teachers provided multiple responses to a question. Their comments are tallied at random and sorted based on how similar and similar their ideas are. The appendix part contains these tables. The instructors' responses demonstrated how conscious they are of their responsibilities as educators. How they understand these responsibilities decide whether or not they are capable of performing them if given the opportunity. Educators understand that no single instructor can fully realize all of their goals at the same time. Most of the time, this requires the appropriate timing, presence of mind, and the ability to make the optimal option.

Results from the second interview:

The first interview question probed the teachers' perspectives on education. Their responses are grouped into twelve categories that reflect their personal beliefs. Teaching is a wonderful job, a calling, a vocation, and a huge responsibility, according to the majority of them. They also believe that education helps students mold their personalities, change their lives, and prepare for the future. They shape students according to their preferred method of delivering knowledge and skills. Teachers shape their own sets of values and help students become better people since teaching is a constant process of learning via various situations. And being a teacher is tough and requires a lifetime commitment for them. Despite the fact that teaching is a demanding career, they enjoy it and see it as a tool to help others. Teachers are primarily concerned with influencing their students' attitudes in order to better prepare them for the future. They can achieve this by serving as role models for them. The

adage "you can't offer what you do not have" supports the argument that teachers must grow themselves in order to be effective. They are not arguing that they already possess the qualities required of a "excellent teacher." However, their strong convictions about teaching may be beneficial to them. The researcher found the teachers' commitment, passion, readiness to learn via experience, recognition that teaching is a hard and challenging endeavor, and concern for their students to be extremely motivating. Though the bulk of the professors are new to the field, their expressed opinions are encouraging. Dr. Asa Hillard (Anderson, 1989), asserts that: (Teaching is a human endeavor involving actual human contacts between a teacher and a student). It is the type of relationship that has a significant impact on how well and freely teachers can convey ideas, skills, beliefs, and sentiments to their students. It is essentially a two-way system. Every teaching-learning activity's success is also determined by students' desire to absorb and use knowledge and skills offered by their teachers. The students' attitudes toward the teacher, the subject, and the entire school environment can be used to determine how well-founded this relationship is. Teaching is a difficult and highly skilled job, as parents, students, instructors, and school officials are well aware. Not all teachers can be the kind that all stakeholders want. Teachers' labor is never-ending due to the practical needs of classroom instruction. Teachers are constantly enthusiastic in exercising their profession as well as their discretion because of their capacity to make the appropriate judgment all of the time as they deal with the different demands of their students. The fact that they work with people and are instruments in making a difference in the lives of those entrusted to them makes the job extremely difficult. Teachers must have a thorough comprehension of what they are teaching. They must understand the significance of their influence on their students. The tiniest mistake in demeanor or speech will have a detrimental impact on numerous kids in a class. They must be aware that they are not going to shatter their students' self- and other-perceptions. Some of the usual consequences of unmindful teachers can be immediate or long-term. If it is immediate, it can be noticed immediately and measures taken to stop it. However, if the influence is long-term, it will take years for it to appear in the person. As a result, every teacher should strive to have a positive impact on their students. Some teachers are correct when they state that teaching is a continuous learning process. Teachers with their feet on the ground are more receptive to criticism and are not afraid to learn the hard way. There are no hard and fast rules for what makes a successful teacher. It can become situation-specific at times. Teachers face a variety of scenarios and obstacles on a daily basis, so it is only natural that they win some and lose some. Regardless of whether they succeed or fail, they should treat every interaction with their students as a learning opportunity. They should improve as teachers and as people as a result of these. The teachers' opinions on how their students learn best were tested in the second interview question. They provided 45 responses, which were divided into six groups. Teachers had nearly identical perspectives on student learning. They believe that students learn best when they are given hands-on activities and are exposed to real-life circumstances. They also learn quickly if what they are doing has meaning for them, if they are genuinely motivated, and if they can express themselves. Furthermore, learning occurs when students are appropriately guided and teachers are at their best. Teachers feel that when students are driven, they will learn more and be more engaged. Students should be given authentic projects to explore and participate actively in the learning process. More significantly, teachers must recognize the

importance of forming positive relationships with students and developing a sense of trust. Furthermore, no amount of teacher preparation will effect students' optimal learning if the teachers do not communicate well and the learning atmosphere is not conducive. The third question focused on the teachers' perceptions of their students. They provided 34 responses, all of which were generic perceptions. Because most of their students are manageable, responsible, and eager to learn, they believe their students are brilliant and learn quickly. They also believe that their students have acquired and developed personal values, and that they are kind and pleasant people who are well-rounded. They are driven to achieve their goals and become change agents despite their differences and special powers. But, contrary to popular belief, several teachers believed they had naughty and immature kids who required assistance. This may seem insignificant, but it sends the message that no matter how good things are in the classroom, teachers can always make a difference in the lives of students who need it the most. When dealing with elementary students, teachers should expect indicators of misbehavior and immaturity. Teachers in these levels should act as surrogate parents for the students. It's only natural for the teachers to accompany them on their journey until they have fully developed into responsible adults. Even if teachers believe their students are well-equipped with potential and highly motivated, they must exercise prudence. These students, who have been described as mischievous, require teachers who can meet their requirements in order to maximize their potential. Though these students are common in all schools, they should not be overlooked. If teachers are unable to conduct classes in such a way that these students are motivated to give their all, their abilities will not be tested, and their desires will not be fulfilled. Given the correct learning environment, competent teachers, interesting learning materials, helpful administration, supportive parents, and opportunities to apply what they have learned whether in school or outside of school, there may be very little reason for children not to perform well. Teachers have no excuse not to give it their all because their students are eager to learn and highly motivated. Teachers' responses to question four revealed their thoughts and sentiments about the subject they are teaching. Six groups were formed from their comments. Their shared conviction is that the subject they are teaching may be used to help students develop their ability to deal with real-life problems. They also believed that their subject could be utilized to promote change and build the value of nationalism, both of which are important for the growth of their students. Some teachers claim that the subjects they teach are difficult, yet they enjoy them. Teachers are expected to create excellent results among their students due to their high regard for what they are teaching. It is important to stress that if teachers are sincerely dedicated to their jobs, they should not limit themselves to factual material that can be judged solely through lower-level thinking skills. Rather, teachers should prepare their students to handle future life issues. Because, if a student is adequately educated, he should be innovative in dealing with life is hardships and tribulations. Someone who thrives academically but is unable to discover practical solutions to practical difficulties is still deemed illiterate and lacking in basic abilities. Every learning experience should include preparing students to deal with everyday issues. It makes no difference what subject a teacher is teaching. There should always be opportunities for students to develop practical skills that can help them overcome obstacles in their lives. This should be the goal of every teacher. The teachers have a strong sense that their subject may help students improve their reasoning skills. Individuals should acquire

critical thinking and higher order thinking skills, which should be one of the educational aims. They should also be able to freely express their thoughts rather than keeping them to themselves. The mind of a person is so powerful that no one can know what is inside it unless thoughts are spoken verbally. How a person expresses his thoughts using well-considered words and proper body language reveals how he or she has been educated. By expressing themselves, great philosophers, scientists, educators, and others made the most of their ideas. A individual must understand how to use his mind is strength in order to give his valuable thoughts to society. Instead of memorizing facts through rote learning, students can strengthen their reasoning skills. Teachers believe that by teaching this subject, they may assist their students become more nationalistic and encourage change. Teachers are no longer bound by the substance of their discipline when they hold this mindset. If this mentality is maintained, the next generation of students undoubtedly be much better because they are fortunate to have professors who adhere to great educational principles. Question 5 highlighted what teachers thought their students should learn in their discipline. They believe that teachers should assist their students in developing self-confidence, self-esteem, self-control, respect, and an appreciation for the importance of listening skills. Their students should also know how to behave in public and contribute to society. They should also learn to value themselves, others, and all living things. They should learn how to follow rules and regulations and how to learn from past experiences to become better individuals as a result of their increased understanding of life is facts. Students with low self-esteem, lack of self-confidence, and lack of self-control are frequently stubborn and difficult to deal with, according to common observation. They have a tendency to fall behind in their academic achievement in addition to these unfavorable characteristics. The professors' desire to help their students learn and grow as people via their own discipline is admirable. Teachers should not have a narrow perspective on education. They should not limit themselves to what students should know in their classes. They should also think about what else they can do for their students and how to make their lesson a vehicle for lifetime learning. It is clear from the professors' replies that they provide value to their respective disciplines. Because they have demonstrated their passion and commitment to be change agents, achieving positive outcomes through education is not be difficult. Teachers are extremely powerful, and their values and ideas, which they convey to their students anytime they contact with one another, can truly mold their students' character to become better humans. The two sets of interview findings had previously been presented. They were debated and interpreted in the manner in which the teachers expressed themselves. They have supplemented the information acquired by the researcher using various equipment. The findings of the interviews revealed a lot about the teachers' beliefs and ideals.

On the other hand, teacher respondent also added that the school would also give a full support by providing teachers a materials that can be used in teaching math like journals in math, mathematic for a daily living and etc. as serve as practice exercises for students so that the academic performance of the students will also improve and the study habits of the students will be tested at the same time.

In this point of view, teachers feel the responsibility to create a strategy like cooperative or collaborative learning in order to help students learn in the mathematical concepts like problem solving in mathematics. And school administrators will also help teachers to create innovations by structuring their classrooms in ways that emphasize student's

contribution to learning process. It is also in a way to strengthen and create of international cooperation networks, increase the academic mobility of faculty and students, new management structures, new methods of assessment, accreditation and financing, diversification of courses, programs, and studies, and the application of technology in teaching and learning.

When questioned about the tactics that they used in teaching mathematics, the participant teachers said that lecture and discussion were frequently utilized because students acquire the concepts on the lesson or subject matter provided it was adequately presented. According to teacher responses; "I used a deductive way of teaching because I believe that student learn the concepts in math if I discuss to them the lessons and demonstrate to them the steps and principle in teaching mathematics. And I believe that I am the best instructional materials, so even if our school have lack of materials for mathematics because the school can't accommodate the thousands of students, so I will be presenting my lessons in a step by step procedures and after I will give them a short test as basis for evaluation". Reflective instructors and students are required for effective teaching. Teachers must be innovative and well-versed in their subject matter, as well as in general. Anyone who signs a contract to teach has an ethical obligation to learn everything they can about teaching and learning (practice and engage more on teaching styles) in order to be a scholarly teacher. We must encourage our students to reflect on their learning and take risks as teachers. In their classrooms, good instructors are substantially more than "good." To improve student learning and development, I feel that out-of-class learning experiences and a fluid learning environment incorporating the integration of curricular, co-curricular, and extra-curricular components are critical. When both teachers and students are deeply involved in the materials and conduct in the classroom, research participants believed that the process and outcomes of teaching and learning are considerably enhanced. He believes that "I can and must do many things to enhance students' engagement, intrinsic motivation, internal attributions, and self – efficacy for our course and disciplines". I establish behavioral objectives for my students in teaching mathematics to further my teaching philosophy. Math is a learning-centered topic for me. I employ a variety of teaching techniques. Active and collaborative approaches are important to me. In the subject, I give students some autonomy and options. I do everything I can to assist students grasp basic math concepts and become intrinsically motivated. Both my students and I discuss our teaching and learning experiences. I use classroom evaluation tools, making adjustments in response to student input and my own reflection, because teaching and learning practices and outcomes can always be improved. Conducting math games to help people learn more quickly, as well as conducting research in the area of teaching and learning scholarship, is a top priority for me. Not only for my students, but also for myself, I want to have the desire and ability to engage in lifelong learning.

Although I think that students are ultimately accountable for their own learning, I also believe that learning is the product of a complex interplay between many factors such as the students, the teacher, peers, and others, the subject, and the environment or context. Learning and teaching are socially constructed processes in which teachers and students collaborate to develop, convey, and negotiate goals, knowledge, and abilities. A teacher who responded said: "I believe that all students can learn want to

learn. And it is my responsibility to appropriately challenge my students and foster their natural desire to learn." When asked about the cooperative learning model, teacher participants agreed because cooperative learning mirrors key societal attitudes and interactions. Students can see multiple points of view and solutions to an issue by working with others. Students learn more efficiently when they work together rather than independently or competitively, according to a recent study. When students work in cooperative groups, they are more favorable about school, subject areas, and teachers. When students work together, they are more favorable about one another, regardless of skill, ethnic background, or handicap. For many students, another advantage of cooperative learning is increased self-confidence. Because teammates take responsibility for one another's learning and have a vested interest in one another's success, all students are more likely to succeed. Success instills self-assurance. Students discover that they each have something to contribute to the group's work by working together, and as they learn that their ideas can be beneficial to others, they gain self-confidence. It considers classrooms (whether online or in person) to be communities of learners. Students may learn from and with each other, as learner-centered teachers know and research teachers affirm. Teachers, of course, have experience and a responsibility to impart it, but they can also learn from students. The importance of instructors in achieving improved academic performance through collaborative efforts is demonstrated in this situation. The instructor and the learner are the two main components that make teaching and learning possible and attainable. Each has a distinct role to perform in the teaching-learning process. Obaob (2009) agreed, citing Hume (1995) in his study, in which he highlighted that students' motivation is strongly linked to their mathematics achievement. "Effective teachers create high criteria for students," Bahramzadeh and Khedmatgozar Baghan (2004) stated. They also state their objectives. Students should be aware of what they study and what they have required to do with what they have learned from the beginning. "Effective teaching refuses to take its effect on students for granted," a teacher participant said when asked about nine descriptions that were evaluated as neutral. The relationship between teaching and learning is complicated, unclear, and relative, according to it. Good teaching is adaptable: it entails continually attempting to determine how instruction affects learning and adjusting the training in light of the data gathered. "Be concerned and respected for students and their learning," according to the research participants, is the eighth descriptor, and it was positively perceived by secondary teachers in X division. They thought that the most common cause of true teaching in higher education is a lack of interest in and compassion for students and their learning. It repeatedly exhibits the classic signs of making a subject appear more difficult than it is. This type of disguise may appeal to some research participants. If they do, they are educating ineffectively. Making things difficult is an important part of good teaching. It has nothing to do with scaring students, but rather with devising a fresh learning technique for them. In order to come up with a range of techniques to assess students' learning, teachers must be able to consider learner's learning styles and multiple intelligences. Although all of these learning styles and multiple intelligences may not be included in assessment tasks, teachers might examine as many styles and intelligences as possible. But first, a teacher must establish clear and attainable goals that serve as a foundation for selecting assessment methods. We engage in the assessment process after we have taught to determine how effectively

we have achieved our lesson aim. This also confirms that the teacher's instruction and the students' learning are critical components.

7 CONCLUSION

Evaluating a teacher's own teaching allows them to see what components of their practice are strong and what aspects need to be altered or improved. Teachers, on the other hand, should take the initiative and responsibility for evaluating their teaching and improving it over time. The assessment scores we receive after teaching determine what we teach. If our lesson objectives are met, we move on to the next competency to teach. If not, we investigate why it was not achieved, implement corrective actions, and then assess learning once more.

For an expert teacher, teaching is an art. This demonstrates how a teacher's philosophy influences their teaching strategy. Expert teachers possess a variety of attributes, including a strong passion for the subject, particularly mathematics, which they can pass on to their students, solid knowledge, and outstanding communication and interpersonal skills. A excellent teacher also contributes to the academic, emotional, and cultural growth of students in addition to instruction. This is reflected in their perceptions of their performance as judged by their school principal. According to them and their administrators, the bulk of the teachers received excellent reviews. Teaching is a noble job because it entails shaping students' brains and attitudes. Through a series of interviews, the current piece of literature attempts to showcase excellent teachers and their abilities. Teaching stages include defining instructional objectives, measuring learners' levels, giving instruction, and developing a strategy for improving students' academic achievement. According to certain readings, a teacher's method of teaching and presenting a topic is founded on their views and philosophy of teaching. They prefer to provide from their own bankable expertise and knowledge.

PERSONAL GROWTH AND PROFESSIONAL DEVELOPMENT

The table 7 below shows the teachers' performance evaluations in terms of personal growth and professional development. There are three sub-categories of indicators in this domain, but only two performance indicators in sub-category two. Personal growth and professional development will be evaluated based on how beneficial they are to their students' learning.

Table 7
Personal Growth and Professional Development
N = 35

Performance Indicators	1		2		3		Mean	Descriptive Equivalent
	F	%	F	%	F	%		
1. *Proud to be a teacher*								
1.1. Upholds the dignity of teaching.	23	76.7	7	3.3	0	0	2.77	High
1.2. Has time for personal and professional growth.	17	56.7	11	36.7	2	6.7	2.50	Low
1.3. Has positive qualities.	21	70.0	9	30.0	0	0	2.70	High
1.4. Demonstrates one's own philosophy.	21	70.0	9	30.0	0	0	2.70	High
2. *Builds professional links with colleagues*								
2.1. Keeps abreast with recent development in educ.	8	26.7	11	36.7	11	36.7	1.90	Low
2.2. Shares best practices.	9	30.0	10	33.3	11	36.7	1.93	Low
3. *Reflects on the attainment of professional development goals.*								
3.1. Reflects on one's teaching	16	53.3	7	23.3	7	23.3	2.30	Low
3.2. Uses feedbacks for improvement.	18	60.0	6	20.0	6	20.0	2.40	Low
3.3. Accountable of learners' achievement.	21	70.0	6	20.0	3	10.0	2.60	High
3.4. Uses self-evaluation to know one's strengths and weaknesses.	21	70.0	6	20.0	3	10.0	2.60	High
Average							2.44	Low

Legend: 3.26-4.00= Very High, 2.51-3.25= High, 1.76-2.50= Low, 1.00-1.75= Very Low

The table depicts how teachers prioritize their own personal and professional growth. Teachers must make an extra effort to stay up with new educational trends because educational practices are becoming more dynamic to meet the needs of the moment. Teachers should not be outdated and should maintain certain traditional values, otherwise they will not fit into the picture. This is possible if they understand how to maximize every opportunity for progress and set the proper priorities. This is corroborated by the findings for item 2.1, which has a mean rating of (1.90) and describes how they stay up with new educational trends.

The highest computed mean of (2.77) falls under item 1.1, which speaks of the instructors' ability to maintain proper behavior in order to retain the dignity of their profession. This suggests they are conscious about maintaining their good reputation as expected of them. However, the professors demonstrate a lack of ability to establish professional connections with other institutions and professions. They must also be open to student comments and view it as an opportunity to improve. Teachers' perceptions of themselves as information providers in the classroom may lead them to believe that they can do things on their own without necessarily allowing others to assist them in enhancing their skills, talents, and abilities. Openness is usually an advantage when it comes to personal development.

PLANNING, ASSESSING, AND REPORTING

The results of the teacher assessment in the areas of planning, assessing, and reporting are shown in Table 8 below. It is divided into four sections, each with twelve performance metrics.

Table 8
Planning, Assessing and Reporting
N = 35

Performance Indicators	1		2		3		Mean	Descriptive Equivalent
	F	%	F	%	F	%		
1. *Uses creative lesson plans.*								
1.1. Have instructional planning.	18	60.0	8	26.7	4	13.3	2.47	Low
1.2. Have instruction as planned	20	66.7	6	20.0	4	13.3	2.53	High
1.3. Can cope with varied teaching milieu.	12	40.0	8	26.7	10	33.3	2.07	Low
2. *Has variety of assessment strategies.*								
2.1. Have formative/summative tests.	25	83.3	4	13.3	1	3.3	2.80	High
2.2. Employs non-traditional assessment techniques.	19	63.3	9	30.0	2	6.7	2.57	High
2.3. Uses assessment results to improve teaching and learning.	18	60.0	7	23.3	5	16.7	2.43	Low
2.4. Identifies difficulties and address them effectively.	12	40.0	7	23.3	11	36.7	2.03	Low
2.5. Uses tools for assessing authentic learning.	24	80.0	5	16.7	1	3.3	2.77	High
3. *Gives feedback on students' progress.*								
3.1. Gives timely and accurate feedback to encourage and monitor learning.	16	53.3	6	20.0	8	26.7	2.27	Low
3.2. Keeps accurate records of grades.	26	86.7	3	10.0	1	3.3	2.83	High
4. *Communicates promptly and clearly learners' progress*								
4.1. Meet learners and parents to report learners' progress.	9	30.0	12	40.0	9	30.0	2.0	Low
4.2. Involves parents in school activities	16	53.3	6	20.0	8	26.7	2.27	Low
Average							2.42	Low

Legend: 3.26-4.00= Very High, 2.51-3.25= High, 1.76-2.50= Low, 1.00-1.75= Very Low

The last section of the observation guide using the NCBTS as a tool during the classroom observation is about preparing, assessing, and reporting. Teachers performed better in this domain than in the others, according to the findings. This indicates that they do not have significant needs as defined by the various performance measures. However, there are some issues of concern that should be investigated in order to foster change and development within the institution. One of these initiatives is to hold regular sessions with learners and parents to report on their progress. In school, the two most essential stakeholders are the parents and the students. As a result, they have a legal right to hear about any instructor comments. Whether positive or negative, any feedback given with the goal of assisting the learner will always be viewed favorably by the parties involved. Reporting on students'

performance in any form, whether directly or indirectly, necessitates specific abilities and sensitivity. To avoid complicating problems, teachers must cultivate this ability. Teachers are reminded of the necessity of understanding and knowing each and every student in class in this domain. Teachers will have an easier time planning, assessing, and reporting if they have enough information on each student. When making plans, the instructor must ensure that student diversity is taken into consideration. Assessment techniques must be tailored to the types of learners who will be evaluated. If things are done this way, it follows that reporting will be based on the progress of individual students.

8 CONCLUSION

Teachers' views have different effects on their teaching techniques depending on what they do in class. Teachers' teaching methods should reflect their attitudes toward mathematics. If teachers wished to foster constructivist mathematical concepts, they should use student-centered teaching, according to Boz (2008). Cohen and Ball (1990) proposed that teachers change their ideas by reflecting on effective approaches. Teacher education should place a greater emphasis on students' own thinking and reflection (Perkila, 2003). Mathematicians should devote all of their efforts to improving our teaching style, tactics, and methodologies.

Our views and practices are influenced by how well we perform in class, and the learnings are influenced by the student's desire to learn mathematics. We must then innovate in order to develop new teaching styles/methods and to effectively attain the desired wants and intentions.

9 RECOMMENDATIONS

According to the findings, teachers should be efficient enough to find time to review ideas that students have not grasped, and they should include affective aims as an additional dimension of teaching that complements the cognitive dimension. The kids' attitude must be transformed from somewhat positive to completely positive. In this scenario, the Guidance Office may offer seminars, lectures, or activities to address the issues of growing up, making modifications, and effectively studying. Students who are having personal or academic difficulties may benefit from a focus group session with them individually. The following measures are taken based on the study's summary and conclusions: First, School Administrators and Supervisors should be directed in developing future plans for in-service trainings, seminars, and workshops aimed at helping learners enjoy mathematics. Second, administrators should give teachers with materials, resources, and technology to help pupils understand subject matter. Third, mathematics training should be accompanied with teaching aids and other instructional materials in order to make abstract concepts concrete in students' minds. Fourth, teachers' motivational tactics should not be limited to what they employ. They must tailor it to the learning styles of the students. They should be encouraged to continue their education in order to stay current with modern motivational practices and improve their teaching methods. Finally, students should be encouraged to investigate their learning styles and work to improve them in order to get better learning

outcomes. They should also educate their teachers on how to adapt teaching tactics to their students' preferred learning styles.

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