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DIFFICULTIES IN SCIENCE TEACHING EXPERIENCED BY THE GRADE 4 TEACHERS IN THE MATATAG CURRICULUM

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Abstract : The main objective of this study was to assess the difficulties in science teaching experienced by the Grade 4 teachers in the MATATAG curriculum in terms of the profile of the respondent schools; difficulties encountered by the teachers in teaching science under the MATATAG curriculum in terms of content and sequencing; instructional materials and facilities; evaluation of learners' performance; and teacher's preparation. The results showed that the teacher-respondents were in the early adulthood, female and married. They were education graduates with specialization in General Science and had units only in master's degree. They were considered experienced in the teaching professions. They had very limited training relevant to their field of specialization. The number of their teaching loads was within the ideal. Teacher-respondents had a slight problem on teaching the content of Science, in administering evaluation of students' performance, and in teaching and administration of the lessons in Science under the MATATAG curriculum. The respondent schools had a problem on the availability of instructional materials, laboratory equipment and manuals on Science. Learners have difficulty in performing the prescribed activities in the manual. Instructional materials like teaching manual and learner's manual and laboratory facilities in the respondent schools were inadequate to effectively implement the MATATAG Curriculum. There was a significant relationship between sex of the teacher and evaluation of student's performance; male teachers had more difficulties in evaluating learners' performance than female teachers. Study showed that female teachers were more considerate in giving grades than male teachers. There's also significant relationship between highest level of education of the teachers and evaluation of learner's performance, and the more the seminars and training teachers attended and the more difficulties teachers encountered in evaluating learner's performance. And lastly, there was a significant relationship between the number of classes handled by teachers and science content and instruction. The researcher recommended that the administrators should encourage and allow more number of teachers to attend seminars and training for Science teachers particularly on the contents of Science in MATATAG. Higher education institutions offering teacher's education may review the curriculum and align this according to the demands of the new MATATAG curriculum. This will enhance teachers' preparedness to deliver the content of the MATATAG curriculum. More instructional materials should be provided to teachers like teaching guide manuals, more books in Science, computers and others so that teaching can be improved. Teachers should be more creative, innovative and resourceful in devising instructional materials and laboratory apparatus to help promote effective teaching.

Keywords: difficulties, Science, Grade 4 teachers, MATATAG Curriculum

INTRODUCTION

Curriculum changes dovetail with societal needs and advancements. As the world evolves, the educational landscape adapts to prepare students effectively. Technological progress, globalization, political acumen, and shifts in societal values necessitate updates to curriculum content and paradigms. This paper stimulates a macro-sociological vista on the MATATAG curriculum in the Philippine context. This revised curriculum, effective from the school year 2024 to 2025, addresses challenges faced by the current K to 12 curriculum, including numerous contents, misplaced prerequisite learning competencies, social inequities, and imbalances in thinking demands. This paper advances discourse regarding the adaptation to humanized learning and addresses the shortcomings of existing systems. In essence, curriculum changes are not just a response to challenges but a proactive stance for the demands of ever-changing needs. Although the context of the MATATAG agenda is not a mere blank ideation, it can be considered a national movement. Undeniably, education cannot be put at stake here because it determines what and how the Philippine nation will become in the next generation.

A snippet of the MATATAG curriculum

A reconfigured, decongest curriculum catapulted on August 10, 2023, as headed by Vice President Sarah Duterte and Secretary of the Department of Education (DepEd). This is earmarked by recalibrating the current K to 12 curriculum.

The MATATAG Agenda aims to cultivate competent, job-ready, active, responsible, and patriotic citizens. This revised K to 10 curriculum reduces the existing K to 12 curriculum's congestion by 70%, streamlining competencies and emphasizing essential elements such as language, reading, literacy, mathematics, patriotism (MAKABANSA), and good manners and right conduct from kindergarten to grade 10. The new curriculum introduces Filipino and English in grade 2, science in grade 3, and social studies, music, arts, and physical education in grade 4. Notably, 'Mother Tongue' and other humanities are excluded. It is expected to be scheduled for phased implementation from August 2024 to 2028.

MATATAG aims to make the curriculum relevant for employability, active, and responsible citizens, accelerate basic education services, promote learner well-being and inclusiveness, and provide support for teachers. The current framework, Republic Act No. 10533 or the Enhanced Basic Education Act, increased the number of years of basic education, introducing senior high school (grades 11 to 12) from 2012 to 2013. Critics questioned the revision's fairness, citing alignment with international standards and the Philippines' previous status as one of the few nations not following a 12-year basic education cycle. Factors of societal change and research prompting the need for curriculum revision. It did not happen in the blink of an eye, surely, the decision to revise received thorough consideration from a diverse group of 1,168 collaborators, including DepEd specialists, teachers, consultants, external parties, and international experts (Escuadro, 2023). The endorsement reflects a commitment to streamline implementation and ensure learners' adaptability to this transformative journey, emphasizing the educational community's dedication to political motives.

Why curriculum change?

Educators, responding to pedagogical research and changing student needs, might introduce micro-level changes in instructional methods and materials. Classroom practices, assessment strategies, and the incorporation of diverse perspectives reflect micro-level adaptations that contribute to the dynamic nature of education. In the Philippines, micro-level changes might involve the integration of local content into lessons or the implementation of innovative teaching techniques. On the other hand, macro-level changes have a wide-ranging impact, influencing the entire education system.

In the Philippines, there has been a significant transition from the traditional 10-year basic education cycle to a K-12 system, showcasing a major macro-level change in the educational landscape. This reform was implemented with the goal of bringing the country's educational system in line with global standards and trends, improving the job prospects of graduates, and tackling persistent challenges in the education sector. Such large-scale changes typically require corresponding adjustments in terms of infrastructure development, teacher professional development, and the allocation of educational materials and resources to support the broader and more comprehensive curriculum. Overall, the shift to the K-12 system in the Philippines represents a strategic move towards creating a more competitive and globally competent workforce while addressing key issues within the education system.

DepEd has undergone various reforms to address issues such as curriculum relevance, quality of education, and accessibility. The 21st century witnessed a huge shift with the advent of the K-12 program, extending basic education to 12 years, and adding senior years to strengthen readiness to the workforce or competencies for tertiary levels. In recent, traversing to post-pandemic, the Philippines introduced the MATATAG curriculum, focusing on relevance, efficiency, learner well-being, and teacher support to produce job-ready, active, and responsible citizens, to say the least.

Science is recognized widely as being of great importance both for economic well being of nations and because of the need for scientifically literate citizenry (Fraser & Walberg, 2005). In response to this, the Department of Education explored different strategies to improve the students' learning in Science subjects. However, majority of the Filipino students still tagged Science as a difficult subject and considered as one of the least like. It is disappointing to know that renowned scientists both in local and international circles rated the present state of science education as "discouragingly poor". Secretary of Education, Armin Luistro, said that are students now ranked among the lowest in Asia when it comes to key subjects like Math and Science.

Science is especially difficult to teach. Some children are simply not interested in the subject, and those who are interested have to make do with the backdated and improvised equipment in our rooms. Even our Science room hasn't changed a bit for, like, 10 years.

Ask a student what is his least favorite subject. Chances are you'll get Math or Science for an answer. DepEd data show that achievement rate of fourth year students in Math dropped from 50.70% in SY 2005-2006 to 47.82% in SY 2006-2007. The decline also happened in Science, from 39.49% to 37.98% in the same period.

A Science and Education Institute study on Trends in Mathematics and Science Study (TIMSS) in 2003 showed that Philippines' 8th grade (2nd year high school) students' skills and competencies in Math ranked a pitiful 42nd out of 46 participating countries while the Philippine 4th grade students placed 23rd out of 25 participating countries.

During the first year of K to 12 implementation, Dep Ed Usec. Yolanda Quijano identified issues and challenges regarding the implementation of Grades 1-10 curriculum for succeeding school years. Major concerns reported were (1) learning resources including the quality of Teachers' Guides, Learners' Materials for Grades 1-3 in the mother tongue and for the spiral curriculum in Grades 7-10 , procurement of textbooks/e-books for Grades 4-10, adequate and timely distribution of learning resources (TGs, LMs, TXs/e-books); (2) competence of teachers, administrators & supervisors which include needs-based training of teachers implementing the curriculum either e-learning or face-to-face, effective instructional supervision of school administrators and supervisors to teachers ; (3) monitoring and technical assistance and evaluation which include implementation of M & TA design and external evaluation ;(4) assessment in key stages starting with SReA for Kindergarten , EGRA (Early Grades Reading Assessment) & EGMA (Early Grades Math Assessment) in the mother tongue in Grade 1 , Grade 3 Assessment in Filipino and English , NAT in Grades 6 & 10 NCAE (National Career Assessment Exam.) in Grade 8 . Other major challenges to deal with are the passage of the bill on K to 12 and completion of the curriculum for grades 11 &12. (Quijano, 2012). Few months later after the said report, K to 12 bill was approved and signed into a law known as RA 10533 or the Enhanced Basic Education Act of 2013 on May 15, 2013. (Official Gazette, 2013)

Aside from shifting to a more relevant and timely curriculum, principles of learning and development taught us that learning is a result of an interplay of many factors- the student, the parents, the teacher, the school, the material resources and the community. The factors that serve as the input in the educational system- human resources, school budget and facilities have to be in sync with one another to achieve the target. With the introduction of the new curriculum, domino effect on other factors is unavoidable- human and material resources within the system need to keep abreast of the changes.

Moreover, although curriculum enrichment is an essential key of concern when it comes to ensuring better learning outcomes, human resource is still the most significant factor. That is why a competent teacher and a learner imbued with positive values are vital keys toward quality learning. However, with the implementation of the enhanced curriculum, teachers and students have faced new challenges which could have been brought by several factors. To cite some- the "ill-preparedness of Dep Ed" as stated by Kabataan Party list Representative Palatino and the lack of budget to fully implement the reforms, solve shortages in teachers, classrooms, tables and chairs, and other educational materials according to Rep Ilagan of Gabriela Party list (Boncoan, 2012). Such scenarios made them vulnerable to difficulties.

The challenges are overwhelming and require concerted effort of all the stakeholders, especially from those who are within the system of education. To be able to adapt to these changes and come up with the appropriate response to these challenges, it is necessary that school administrators, teachers and students make proactive approaches or interventions that fit their own school setting. By doing so, difficulties could be gradually addressed and overcome which could lead to better chances of attaining the DepED One Vision and Mission. (Facing the Challenges of K to 12 Education, Ara S. Velasco, 2014)

In contrast to what Bruner's idea of spiral curriculum Gamoran (2001) view spiral curriculum as smorgasbord of math topics by students each year, the idea being that they pick up a little more of each with every pass. In reality, the spin leaves many students and teachers in the dust. Ideally, the curriculum should cover fewer topics per year in more depth. Recently, the teachers face having Grade 4 classes who still cannot add 567 + 942 nor multiply 7x8 because the Grade 1, 2 &3 teachers were forced to spend so much time on graphing polygons and circles, estimating quantity & size, geometrical transformations, 2D & 3D geometry and other material not required to make the next step, which is 732 x 34. (Gamoran, A. (2001) Beyond Curriculum Wars: Content and Understanding in Mathematics)In all education system, the performance of teachers is one of the handfuls of factors determining school effectiveness and learning outcomes. Naik (1998) explains that teaching is noble, but demanding occupation. In order for teachers to maintain a high level of professional performance under these conditions, they must assume personal responsibility for their own performance, growth and development. Mohanty (2000) explains that teacher performance as the most crucial input in the field of education. Teachers are perhaps the most critical component of any system of education. How well they teach depends on motivation, qualification, experience, training, aptitude and a mass of other factors, not the least of these being the environment and management structures with in which they perform their role. Teachers must be seen as part of the solution, not part of the problem. Poor pay, low status and morale are key causes of poor performance and corrupt behavior in the public sector. Across the world, millions of teachers, most of them women, are working tirelessly for poverty wages educating the next generation.

Smith and Glenn, (2004) explains that internal factors have an impact on teachers feeling of success and a number of external forces can either aid or hinder a teachers success. There are number of factors that influence teacher performance. Increased duties and demands on time, low pay, and disruptive students have a significant impact on teachers' attitudes toward their jobs. In addition, lack of support from staff at all levels has an effect on teacher performance. Teachers are no exception. Low pay and student conduct problems in the classroom are just a couple of issues that teachers face. Low morale among teachers is another very important problem that must be addressed if the problem of teacher shortages is going to change and ultimately improve. In order to work toward a solution, the first step is to identify those factors that have the greatest impact on morale levels, both negative and positive. (Teacher's Competencies and Factors Affecting the Performance of Female Teachers in Bahawalpur (Southern Punjab) Pakistan. Nadeem, et.al., 2011).

Smith (2005) suggests that learning's a consequence of experience' (p.588). He argues that education and therefore teaching should be focused on the creation of 'appropriately nourishing experiences so that learning comes about naturally and inevitably'. He states that schools should focus less on 'talking about learning and teaching' and 'more about *doing*'. Is this then the answer to the quest? To reflect on what we do in the classroom rather than on all the talk about theory and practice. To develop an effective teacher model by identifying clearly what it is that effective teachers do in their classrooms?

If this were the case then Alton-Lee (2003) has provided ten clearly defined and research supported characteristics of quality teaching. Although these characteristics were developed for 'diverse students', I would question how many classrooms in New Zealand or anywhere in the world would be made up of anything but diversity in culture, ability and social point of view. Alton-Lee's ten point model covers the following areas:

1. A focus on student achievement.
2. Pedagogical practices that create caring, inclusive and cohesive learning communities.
3. Effective links between school and the cultural context of the school.
4. Quality teaching is responsive to student learning processes.
5. Learning opportunities are effective and sufficient.
6. Multiple tasks and contexts support learning cycles.
7. Curriculum goals are effectively aligned.
8. Pedagogy scaffolds feedback on students' task engagement.
9. Pedagogy promotes learning orientations, student selfregulation, metacognitive strategies and thoughtful student discourse.
10. Teachers and students engage constructively in goal-oriented assessment. (Alton-Lee, 2003)

According to Ruth Zuzovsky on her book Teachers' qualifications and their impact on student achievement (2003), findings related to teachers' academic degrees (Bachelor's, Master's, doctorate, and other) are inconclusive. Some studies show positive effects of advanced degrees (Betts, Zau, & Rice, 2003) others show negative effects. Some researchers maintain that the requirement for teachers to have a second degree raises the cost, financially as well as in time, of teacher education, which may prevent quality candidates from choosing this profession (Murnane, 2006).

Given the fact that there are a lot of science topics and knowledge that science teachers have to master and which present various difficulties, it is necessary for us to define what it means to understand any science topic well enough to teach it effectively. There has been a common consensus that teachers with more science knowledge are better prepared to engage in effective teaching practice. Supovitz and Turner (2000) found that teachers' content preparation has a powerful influence on teaching practice. Their

empirical study employed hierarchical linear modeling to examine the relationship between professional development focusing on enhancing teacher's subject matter knowledge and teachers' teaching practice. Monk 2004) found that there are positive relationships between teachers' subject matter preparation and teaching practice that ultimately increases improvement in students' performance. Van Driel, Beijaard, &Verloop (2001) also suggested that science teachers' practical knowledge and content knowledge contribute to the improvement of their teaching practice. Individual teacher efforts to develop their science knowledge make a significant difference in ensuring the quality of their teaching practice.

Goldhaber and Brewer (2000) found a positive relationship for students' mathematics achievement but no such relationship for science. Rowan et al. (2007) reported a positive relationship between student achievement and teachers with a major in mathematics. Monk (2004), however, found that while having a major in mathematics had no effect on student achievement in mathematics, having a substantial amount of under- or post-graduate coursework had a significant positive effect on students in physics but not in life sciences. Ingersoll (2003) considered the widespread phenomenon in the United States of teachers teaching subjects other than those for which they had formal qualifications. His study of out-of-field teaching (as it is known) portrayed a severe situation where42% to 49% of public Grades 7 to 12 teachers of science and mathematics lacked a major and/or full certification in the field they were teaching.

The literature shows a somewhat stronger, and more consistently positive, influence of education and pedagogical coursework on teacher effectiveness. Some of these studies compare the effect on student achievement of courses in pedagogical subject matter with the effect of courses in the subject matter itself, and present evidence in favor of the former. An example is a study conducted by Monk (2004) related to mathematics achievement. Other studies reveal no impact of education courses on students' achievement (see, for example, Goldhaber & Brewer, 2000, in relation to science achievement).

The relationship between teacher experience and student achievement is difficult to interpret because this variable is highly affected by market conditions and/or motivation of women teachers to work during the child-rearing period. Harris and Sass (2007) point to a selection bias that can affect the validity of conclusions concerning the effect of teachers' years of experience: if less effective teachers are more likely to leave the profession, this may give the mistaken appearance that experience raises teacher effectiveness. Selection bias could, however, work in the opposite direction if the more able teachers with better opportunities to earn are those teachers most likely to leave the profession.

Professional development activities can be conducted by many different organizations, in school and out of school, on the job or during sabbatical leave. On these occasions, practicing teachers update their content knowledge and teaching skills so they can meet the requirements of new curricula, consider new research findings on teaching and learning, and adapt to changes in the needs of the student population, and so on. Criticism has been leveled against the episodic nature of these activities and concern expressed that very little is known about what these activities really comprise and involve.

Theoretical Framework

Based on Jean Piaget's theory, educators must plan a developmentally appropriate curriculum that enhances the students' logical and conceptual growth (www.piagets.com.ph. December 16, 2017).

Curriculum experts are the ones identifying people and groups who should be responsible for curriculum development: policy makers, curriculum developers, and curriculum users or adopters. Some curriculum experts look at the relationship among these components as hierarchical (Saylor and Alexander, 2004) with decisions emanating from the policy makers and handed down to teachers, with the students on the receiving end.

From a cognitive constructivist's point of view, learners construct new ideas based upon their previously learned knowledge. Gradual mastery of the desired competencies is achieved through revisiting core ideas in several passes and relating new knowledge or skills with the previous. Therefore, unlike the old curriculum where so much knowledge was expected to be learnt within a limited period, the K to 12 curriculum on the other hand is decongested and seamless. It has its focus on understanding for mastery and it ensures smooth transition between grade levels and continuum of competencies through spiral progression (SEAMEO INNOTECH, 2012). In the old curriculum, students were expected to learn so much knowledge, skills, and values within a limited period of time. Learning tended to be 'more focused on content, which was fragmented and disintegrated'. The K to 12 Education Program aims at addressing these shortcomings.

Jerome Bruner argues that the curriculum should revisit basic ideas and repeatedly build upon these ideas until the learner understands fully. He suggests that the early teaching of a subject should put emphasis on grasping the basic ideas intuitively. He advises that the curriculum should revisit these principal ideas repeatedly, building cumulatively upon them, gradually making connections between fundamental ideas and new ones until the students understand them fully. Bruner recommends that the curriculum be built upon the natural thinking processes of the learner. He argues that the child should be presented with ideas that are not too distant from his or her natural way of thinking.

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Statement of the Problem

The main objective of this study was to assess the difficulties in science teaching experienced by the public elementary school teachers in the MATATAG curriculum in Sta, Barbara I and II Districts, Schools Division Office I Pangasinan during the school year 2024-2025.

Specifically, this sought to answer the following questions:

1. What is the profile of the respondent schools in terms of:
    - 1.1 learners' population;
    - 1.2 average number of learners per class; and
    - 1.3 number of Science teachers.

1.4 Schools Infrastructures, Facilities and Equipment

2. What is the profile of the respondent-teachers in terms of:
   - 2.1 socio-demographic characteristics; and
   - 2.2 professional characteristics
3. What are the difficulties encountered by the teachers in teaching science under the MATATAG curriculum in terms of:
   - 3.1 content and sequencing;
   - 3.2 instructional materials and facilities;
   - 3.3 evaluation of students' performance; and
   - 3.4 teacher's preparation.
4. Is there a significant relationship between the socio-demographic profile of teachers and difficulties they encountered in teaching science under the MATATAG curriculum?

Scope and Delimitation

This study entitled "Difficulties in Science Teaching Experienced by the Grade 4 teachers in the MATATAG Curriculum" was conducted in public elementary schools of Sta, Barbara I and II Districts, Schools Division Office I Pangasinan. Thirty-six grade 4 Science teachers teaching during the School Year 2024-2025 were the respondents of the study.

The study focused on the description of the profile of the schools in terms of learners' population, average number of learners per class and number of Science teachers. It included also the profile of the teachers in terms of socio-demographic characteristics and professional qualifications.

The study also focused on the difficulties encountered by the teachers in teaching science under the MATATAG curriculum in terms of content and sequencing, instructional materials and facilities, evaluation of students' performance and teacher's preparation to teach.

METHODOLOGY

Research Design

The researcher used the descriptive-normative survey method in this study.

According to John W. Best and James V. Kahn (2003), descriptive research describes what was, involves describing, recording, analyzing and interpreting conditions that exist. It involves some type of comparison or contrast and attempts to discover relationships between existing non- manipulative variables.

This type of educational research is applicable in this study for it assessed the teachers' difficulties in teaching science under the MATATAG curriculum. According to Good, one of the purposes of the descriptive method is to secure evidences concerning existing situations or current conditions.

Sources of Data

The respondents of the study were the Grade 4 teachers. The said schools were all public elementary schools of Sta. Barbara I and II Districts, Schools Division Office I Pangasinan and were under the MATATAG curriculum.

Purposive sampling technique was used in the study specifically, homogeneous sampling. The researcher used public high schools and the teacher respondents were all teaching Grade 4 subjects.

Instrumentation and Data Collection

Data were gathered from the Grade 4 teachers using questionnaire-checklist of teaching difficulties experienced by the science teachers in the implementation of MATATAG curriculum. In preparing this questionnaire, the 2000 National Survey of Science and Mathematics Education, the researchers' observation and experience and interview of other science teachers served as bases.

The questionnaire was composed of three parts. Part I dealt with the teacher's personal background information. Part II was designed to determine the teacher's teaching difficulties regarding Science Subject under K-12 curriculum. This part consisted of four-point rating scale items pertaining to problems in the following areas: (A) Science Content Instruction and Sequencing, (B) Instructional Materials, (C) Evaluation Procedure of Student's Performance and (D) Teacher's Preparation. The teachers had to answer each item with a four-point scale namely: Very much of a problem, A problem, Slightly a problem and Not a problem.

Part III was a with 4-point rating scale that assessed the teacher's preparation to teach different science subjects under MATATAG Curriculum.

The teachers answered each item with four-point scale namely: Very Well Prepared, Well Prepared, Somewhat Prepared and Not Well Prepared.

B. Interview

A personal interview on Science Area Chair was also conducted to gather information about the school profile and the availability of laboratory rooms and equipment.

The researcher personally administered the distribution and collection of questionnaires-checklists. Before the administration of the instrument, permission was obtained from the Dean of Graduate School and from the Principals of different high schools, where the respondents were teaching. The researcher approached the selected respondents individually or by department. Data gathering was administered in School Year 2024-2025.

The questionnaire-checklist was left behind for the respondents to fill-up and was retrieved after 5 days. For the information of school and science materials, the data were gathered from the Science head or Science area chairman.

Tools for Data Analysis

In this study, the researcher used the following statistical measures to analyze the data for the problems.

The various data gathered by the researcher were compiled, sorted out, organized and tabulated. They were subjected to statistical treatment to answer the specific problems of the study. The following statistical computations were used in the analysis of data.

Frequency Counts. Frequency distribution was utilized in listing different categories to establish the respondents' profile like age, sex, civil status, educational attainment, major, highest level of formal education, years of experience, seminars and training, grade level assigned and number of classes handled.

The data were tallied and counted to arrive at a frequency distribution and to facilitate their organization into tables.

Percentage. Percentage was used to establish or to compare the proportion of frequencies of responses to the total number of responses. Percentage was computed by dividing the frequency of the category by the total number of respondents multiplied by one-hundred (100).

The percentage formula used is:

$$P = \frac{f}{N} \times 100$$

where:

P = percentage
f = frequency
N = number of respondents
100 = constant

Weighted Mean. The mean scores of the respondents in the different variables were obtained using the formula:

$$WM = \frac{TWF}{N}$$

where: WM = weighted mean
TWF = total frequency
N = number of the respondents

The following scales were used as derived from the instrument:

Scale	Verbal Interpretation
4	Very Much of a Problem
3	A Problem
2	Slightly a Problem
1	Not a Problem

To compute the relationship of the variables involved and to test their significance, Pearson's *r* was used.

Ethical Consideration

Permission was sought from the Schools Division Superintendent where the researcher is working so as to study the potential harmful impact and risk to participants. Consent of the participants was equally considered because it is important to have access and rapport to the vulnerable individuals participating in the study (Anderson & Spencer, 2002). The consent contained the right of the participants to voluntarily withdraw from the study at any time; the central purpose of the study and the procedures used in the data collection. The researcher obtained the permission of the participants with regard to the audio and video recording of the one-on-one interview conducted for the accurate transcription of the interviewees of the condition under which confidentiality may be broken, according to the ethical codes of teachers.

The participants were identified utilizing purposeful criterion sampling procedure. Then, the researcher obtained the permission of the participants with regard to the audio and video recording of the one-on-one interview conducted for accurate transcription of the response

RESULTS AND DISCUSSION

School Profile

The school profile in this study included the population of Grade 8 students, number of Science teachers, and average number of students per class.

In terms of numbers of teachers in each respondent school, the mean was 6.3. one school had the biggest number of science teachers with 10 teachers. On the other hand, three schools had the least number of science teachers.

As to the class size, the mean was 43.2, with the size ranging from 40-48. The prescribed average class size must be with 43-45 students. This meant that the average class size in the respondent schools was close to ideal.

2. Socio-demographic Characteristics

This section presents the socio-demographic characteristics of the science teachers which included age, sex and civil status (Table 1).

Eleven or 30.56 percent of the teachers were 26-30 years old; 8 or 22.22 percent were at the age group of 31-35, 5 or 13.86 percent were at age 46 and above. On the other hand, 4 or 11.11 percent of the respondents were at the ages 21-25, 36-40 and 41-45. The mean age was 35.67 which meant that Science teachers were in their early adulthood and were in the stage of establishing family.

Table 1. Respondents' Socio-demographic Profile

	F	Percentage
Age Level		
21-25	4	11.11
26-30	11	30.56
31-35	8	22.22
36-40	4	11.11
41-45	4	11.11
46 and above	5	13.89
Weighted Mean	**36.67**	
Sex		
Male	7	19.44
Female	29	80.56
Civil Status		
Single	12	33.33
Married	21	58.33
Widow	3	8.33

In terms of educational attainment, Table 3 shows that 32 or 88.89 percent of the respondents were education graduate and only 4 or 11.11 percent were non-education graduate but had earned units in education. Aside from taking professional education subjects, Education students also had practice teaching. Hence, it can be inferred that almost all science teachers in the respondent schools were equipped with knowledge and skills on methods and techniques of teaching.

Table 2. Percentage Composition as to Respondents 'Bachelor's Degree, Major of Study in Science and Highest Level of Formal Education

	F	**Percentage**
Bachelor's Degree		
Education Graduate	32	88.89
Not Education Graduate	4	11.11
Highest Level of Formal Education		
Units in Master's Degree	4	11.11
Masteral Degree Holder	32	88.89

Table 3 shows the distribution of respondents when grouped according to the years of experience in teaching Science. The average number of years of service of the respondents was 10.31. Findings indicated that 21 or 58.33 percent had teaching experience ranging from 6-10 years, 8 or 22.22 percent had teaching experience ranging from 11 and above and 7 or 19.44 percentage of the respondents had teaching experience ranging from 1-5 years.

Table 3. Percentage Composition as to Years of Experience in Teaching Science and Seminars and Training attended in Science

	F	**Percentage**
Length of Service		
1-5 years	7	19.44
6-10 years	21	58.33
11 and above	8	22.22
No. of training and Seminars Attended		
1	14	38.89
2	8	22.22
3	4	11.11
	6	16.67
4	4	11.11

As to number of classes handled, 17 or 47.22 percent had 4 teaching loads; 14 or 38.89 percent had 5 teaching loads and 1 or 2.78 percent had 2 teaching loads.

The findings show that majority of the teacher respondents had 4-5 teaching loads. With this number of teaching loads, they still had ample time to prepare for their lesson and perform other tasks. The maximum teaching loads given to a teacher must be five to six so that they can still had time for lesson planning, checking of student's output and other teaching activities.

Table 4. Percentage Composition as to Grade Level Assigned and Number of Teaching Loads

	F	Percentage
Number of Classes Handled		
2	1	2.78
3	4	11.11
4	17	47.22
5	14	38.89

3. Teaching Difficulties

The teaching difficulties that were assessed in this study were those related to the content and sequencing of the subject, availability of instructional materials and facilities, evaluation of students' performance and teacher's preparation in teaching Science.

Subject Content and Sequencing. In terms of science content, the average weighted mean was 2.31 with verbal interpretation of "slightly a problem". Examining Table 5, it can be noted that teacher respondents considered all statements as slight problem except the statement *"There are too many lessons in every grading period"*, which got a weighted mean of 2.50 and had a verbal interpretation of "**a problem**." Most of the teacher respondents agreed that the activities in the K-12 Science teaching manual were too many given the number of days to cover all those lessons.

Table 5. Science Content and Sequencing

Science Content and Instruction	Weighted Mean	Verbal Interpretation
1. The activities in the teaching guide are difficult to understand.	1.86	Slightly a problem
2. Some topics in the teaching guide are too difficult for the students.	2.33	Slightly a problem
3. Most students have no prior knowledge of the lesson or topic in the k-12 Science.	2.47	Slightly a problem
4. There are too many lessons in every grading period.	2.50	A problem
5. There are too many activities/exercises for every lesson.	2.39	Slightly a problem
6. The lessons in the teaching guide are not properly sequenced.	2.33	Slightly a problem
Average Weighted Mean	2.31	Slightly a problem

Instructional Materials. In terms of instructional materials, the average weighted mean was 2.63 with a verbal interpretation of "a problem". Table 8 shows that teacher respondents considered all the items as **a problem** except the statement, "*Lack of support from school administrators in providing budget for school materials",* with a weighted mean of 2.39 and had a verbal interpretation of "**slightly a problem"**.

Table 6. Instructional Materials

Instructional Materials	Weighted Mean	Verbal Interpretation
1. Lack of support from administrators in providing budget for school materials.	2.39	Slightly a Problem
2. Inadequate laboratory facilities.	2.69	A Problem
3. Inadequate devices and instruments to be utilized in laboratory activities.	2.78	A Problem
4. Inadequate supply of learning manuals and instructional materials.	2.50	A Problem
5. Instructional materials from DepEd do not come on time.	2.78	A Problem
Average Weighted Mean	2.63	A Problem

Evaluation of Learner's Performance. In terms of evaluation of student's performance, it had an average weighted mean of 2.30 with a verbal interpretation of slightly a problem. Teacher respondents considered all the items as slight problem except the item *"My learners have difficulty in drawing conclusions, analyzing and making generalization in written evaluation"* and *"My students have difficulty in individual or group demonstration or presentation assessment"*. Both these items were considered a problem.

Table 7. Evaluation of Learner's Performance

Evaluation of Learner's Performance	Weighted Mean	Verbal Interpretation
1. I find it difficult to administer practicum evaluation.	2.11	Slightly a problem
2. I observed that my learners find it difficult to perform practicum evaluation.	2.44	Slightly a problem
3. I have to do an item analysis of examination every grading period.	1.83	Slightly a problem

4. I have to prepare the numerical and descriptive rating of learner's grade.	1.89	Slightly a problem
5. Checking the output of my learners consume too much time.	2.19	Slightly a problem
6. My learners have difficulty in drawing conclusions, analyzing and making generalizations in written evaluation.	2.89	A Problem
7. My learners have difficulty in individual or group demonstration or presentation assessment.	2.64	A Problem
8. My learners have difficulty in accomplishing Science projects and portfolio every grading period.	2.42	Slightly a problem
Average Weighted Mean	**2.30**	**Slightly a problem**

Teacher's Preparation. In terms of teacher's preparation, the average weighted mean was 1.69 with a verbal interpretation of "slightly a problem". All items were rated as slightly a problem. Examining individual meant, it can be noted that the item "I lack expertise in designing, improving and manipulating instructional materials and devices" obtained the highest mean. This skill was very important in the K-12 Science curriculum since performance and output of students had the highest weight in their evaluation. Hence, the teacher should be skilled enough to facilitate the laboratory works of students. He/she must first demonstrate the use of laboratory equipment before engaging the students to laboratory works.

Table 8. Teacher's Preparation

Teacher's Preparation	Weighted Mean	Verbal Interpretation
1. I lack academic preparation in teaching the Science subjects I handle.	1.61	Slightly a Problem
2. I lack pre-requisite knowledge and skills in performing scientific activities.	1.67	Slightly a Problem
3. I lack mastery of the topics I have to teach.	1.67	Slightly a Problem
4. I lack expertise in designing, improving and manipulating instructional materials and devices.	1.78	Slightly a Problem
5. I lack skills in developing and formulating evaluation materials or strategy.	1.69	Slightly a Problem
6. I lack competencies in science methods, approaches and techniques.	1.69	Slightly a Problem
Average Weighted Mean	1.69	Slightly a problem

As to their preparedness to teach the different science subjects, Grade 8 teachers agreed that they were **"somewhat prepared"** to teach lessons in Science and **"not well prepared"** to teach lessons in other higher science topics.

On the other hand Grade 8 teachers agreed that they were **"not well prepared"** to teach lessons in Physics, Chemistry and Biology, and answered **"somewhat prepared"** to teach lessons in Earth Science (Table 10).

4. Relationship between the Socio-Demographic Profile of Teachers and Difficulties they Encountered in Teaching Science under the MATATAG Curriculum

Table 9 shows the relationship between the socio-demographic profile of teachers and difficulties they encountered in teaching science. Data revealed that there was a significant relationship between sex of the teacher and evaluation of learner's performance, highest level of education of the teachers and evaluation of learner's performance, seminars and training of teachers and evaluation of learner's performance and number of classes handled by teachers and science content and instruction.

Table 9. Correlation between Socio-demographic Profile and Teaching Difficulties

	Science Content and Instruction	**Instructional Materials**	**Evaluation of Students' Performance**	**Teacher's Preparation**
Age	-.242	-.210	.005	-.077
Sex	.326	-.069	.406*	.299
Civil Status	-.109	-.071	-.048	.199
Educational Attainment	-.071	.127	-.078	-.190
Highest Level of Formal Education	.275	.158	.378*	.122
Number of Years in Teaching	-.190	-.243	.136	-.122
Seminars and Training	.030	-.050	.370*	.305
Number of Classes Handled	.331*	.130	.123	-.263

Significant at P=.05

Recommendations

From the findings of the study and based on the conclusions drawn, the following recommendations are offered:

1. Administrators from Division Office should encourage and allow a greater number of teachers to attend seminars and training for Science teachers particularly on the contents of Science in MATATAG curriculum.
2. Higher education institutions offering teacher's education may review the curriculum and align this according to the demands of the MATATAG curriculum. This will enhance teachers' preparedness to deliver the content of the MATATAG curriculum.
3. More instructional materials should be provided to teachers like teaching guide manuals, more books in Science, computers and others so that teaching can be improved.
4. Teachers should be more creative, innovative and resourceful in devising instructional materials and laboratory apparatus to help promote effective teaching.
5. Administrators should regularly supervise teaching so that the problems which occur can be solved or remedied.
6. Another study can be conducted on the learning difficulties experienced by the learners in Science subjects.

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