IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

INSTRUCTIONAL COMPETENCE OF GRADE 7 SCIENCE TEACHERS

PAULINE CHARM C. FERRER
Institute of Graduate and Professional Studies
Lyceum-Northwestern University
Dagupan City

Abstract: This study assessed the level of the Grade 7 Science teachers' instructional competence along the four domains of teaching, learning and assessment. It employed the descriptive-correlational research design since it employed the descriptive method of investigation in finding for the significant relationship between the profile of the Grade 7 science teachers and their instructional competence level and the significant relationship between the instructional competence of the Grade 7 Science teachers and the problems encountered in teaching Science. The study looked into the profile of the Grade 7 Science teachers in terms of their personal and professional characteristics. Further, it assessed the level of instructional competence in the teaching of Science specifically along knowledge of content, preparation and utilization of instructional materials, application of varied teaching strategies and preparation and utilization of assessment materials. Moreover, the study attempted to specify the problems being encountered by the Grade 7 teachers in the teaching of Grade 7 Science and the degree of seriousness of such specifically along the four (4) afore-cited domains. Based on its findings, the study proposed an instructional development plan which can enhance the instructional capability of Grade 7 science teachers in the public secondary schools. The proposed development plan is recommended for implementation beginning school year 2024-2025 to school year 2026-2027.

To answer the research problems, twenty-nine (29) Grade 7 Science teachers in the public secondary schools during school year 2023-2024 in the municipalities of Binmaley, Bugallon, and Lingayen, Province of Pangasinan were employed as respondents representing 100 percent of the population of Grade 7 teachers handling the aforementioned subject. Frequencies that were converted into percentages and average weighted means were the statistical tools used to analyze the data drawn from the questionnaires.

The study came out with the following findings: 1) the teachers are qualified to teach Science based on the analysis of their personal and professional attributes although, a number of the teachers are not major in Science, 2) the teachers are moderately competent in a number of their functions along the four domains, 3) there are moderately serious problems that are being encountered by the teachers in the delivery of their instructional functions along the four domains of teaching, learning and assessment, and, 4) a three-year development plan which is based on the identified gaps, is proposed for implementation.

The study concluded that the Grade 7 Science teachers are still far from the desired instructional competency level of high to very high. It likewise, concluded that the proposed three-year development plan can be the right formula to address the competency gap of the teachers. Based on the findings and conclusions drawn, the study recommended the implementation of the three-year development plan and to undertake effective monitoring end evaluation system to find out its impact on the instructional competency of the Science teachers.

Keywords:

I. INTRODUCTION

Teaching is more than just imparting knowledge, it is an active engagement between the teacher and the learner, wherein the teacher's role is to bring about the desired change in the learner's cognitive, affective, and psychomotor behaviors.

Teachers' competencies offer practical strategies, practices, and rules to guide teachers in ways to improve instruction that improves student performance and the quality of the work experience. It is believed that four groupings of these competencies can help organize, master and maximize their performance: classroom management, instructional delivery, assessment, and personal competencies.

Teacher performance is the most crucial input in the field of education. (Pacuno and Sanchez, 2020) The teacher must possess teaching competency and pedagogical content knowledge to be efficient and effective. A teacher's competencies involve a related set of knowledge, skills, and attitude that enables her/him to perform responsibility effectively. (Asis, J.M.N, Caballes, D.G, & Ortiz, O.E., 2023) To maximize student learning, teachers must have expertise in a wide-ranging array of competencies in an especially complex environment where hundreds of critical decisions are required each day (Queroda, 2020; Dela Fuente, 2021). Few jobs demand the integration of professional judgment and the proficient use of evidence-based competencies as does teaching. It demands the application and usage of the different set of related knowledge, skills, and abilities to successfully perform 'critical work functions' or tasks in a defined work setting.

The transformational power of an effective teacher is to some degree one way or the other all of us have experienced. Naturally, the link between teaching and student academic achievement may seem obvious, but what is the evidence for it? Research reveals that how teachers interact and execute the instruction is the foundation to build effective school. Teachers play a critical role in student learning and achievement. In the daily life of students, they encounter different kinds of teachers. It is a fact that the various teaching competency levels of their teachers bear different effects on the students' learning. Because of this, teachers must be aware of their level of competency to be extra conscious of how their teaching affects the student's learning. (Asis, J.M.N, Caballes, D.G, & Ortiz, O.E., 2023)

Better learning happens in a dynamic setting in which teachers offer explicit active instruction than in situations in which teachers do not actively guide instruction and instead turn control over content and pace of instruction to students (Hattie, 2009). Conducting effective formative assessment and progress monitoring after the instruction is indispensable in promoting teacher and student success. Feedback, a core component of formative assessment, is recognized as an essential tool for improving performance. Formative assessment consists of a range of formal and informal diagnostic testing procedures, conducted by teachers throughout the learning process, for modifying teaching and adapting activities to improve student attainment.

For the second time, the Philippines joined the Programme for International Student Assessment (PISA) of the Organization for Economic Co-operation and Development (OECD) in 2022 as part of the Quality Basic Education reform plan and a step towards globalizing the quality of Philippine basic education. The Philippines was represented by a total of 7,193 students from 188 public and private schools. The total participating students represent the country's almost 1.8 million 15-year old students or 83% of the 15-year-old total population. By participating in PISA, we were able to establish our baseline in relation to global standards and benchmark the effectiveness of our reforms moving forward. The PISA results, along with our own assessments and studies will aid in policy formulation, planning and programming.

Unfortunately, the said assessment revealed that the Philippines average was about the same as in 2018 in mathematics, reading and science. Over the most recent period (2018 to 2022), the gap between the highest-scoring students (10% with the highest scores) and the weakest students (10% with the lowest scores) narrowed in mathematics, while it did not change significantly in reading and science. In mathematics, low-achievers became stronger, while performance did not change significantly amongst high-achievers.

Filipino learners had the lowest mean score and ranked sixth – lowest in reading comprehension (347 points compared to the OECD average of 476 in 2022 from 340 points, below the 487-point survey average in 2018). They also ranked sixth in Mathematics (355 points compared to the OECD average of 472 in 2022 from 353 points, below the 489-point survey average in 2018) and ranked third – lowest in Science (356 points compared to the OECD average of 485 in 2022 from 357 points, below the 489-point survey average in 2018). Wherein each 20-point deficit from the average signifies a one-year lag in the annual learning pace of 15-year-olds in PISA-participating countries.

Although there is a slight increase on the ranking of Philippines on the different participating economies based on their students' performance in Reading, Science and Mathematics (78 over 78 in 2018 and 77 over 81 in 2022) there is barely improvement and still below par the OECD average. The said report was posted in the Organization for Economic Co-operation and Development (OECD) page (www.oecd.org) and Congressional Policy and Budget Research Department (CPBRD) page (cpbrd.congress.gov.ph). The same scenario is being experienced in the division, district and school level.

It is debatable to reconcile the performance of a teacher to the performance of the learners which is supposed to be at parallel. As teachers play the critical role in student achievement, it is expected that their competencies and expertise in executing the instruction is meeting the demands of our modern, global and competitive world. The instructional competence of science teachers should equate with the competence of the learners. Since it is impossible to be an effective teacher without being competent in both subject-matter knowledge and pedagogical ability, the researcher finds the vitality to conceptualized and address concerns along the provision of determining the instructional competence of Science teachers in the public secondary schools in the Municipality of Lingayen, Bugallon and Binmaley.

Statement of the Problem

The study assessed the instructional competence of the Grade 7 Science teachers in the public secondary schools in Binmaley, Bugallon, and Lingayen, Schools Division Office I Pangasinan for the School Year 2023-2024.

Specifically, it answered the following sub – problems:

1. What is the profile of the Grade 7 Science teachers in terms of the following:
   - A. Personal Attributes:
   - a.1. Age
   - a. 2. Sex
   - B. Professional Characteristics:
   - b.1. Length of Experience in teaching Science
   - b.2. Position
   - b.3. Area of Specialization
   - b.4. Relevant Seminars/Trainings attended
2. What is the level of instructional competence of the Grade 7 Science teachers along:
   - a. Knowledge of Content
   - b. Preparation and Utilization of Instructional Materials
   - c. Application of Varied Teaching Strategies
   - d. Preparation and Utilization of Assessment Materials
3. Is there a significant relationship between the profile of the Grade 7 Science teachers and their level of instructional competence along the aforementioned dimensions?
4. What are the problems encountered by the Grade 7 teachers in the teaching of Science along:
   - a. Knowledge of Content
   - b. Preparation and Utilization of Instructional Materials
   - c. Application of Varied Teaching Strategies
   - d. Preparation and Utilization of Assessment Materials

5. Is there a significant correlation between the level of instructional competence of the Grade 7 Science teachers and the problems being encountered in teaching Science?
6. What three-year instructional development plan can be proposed to enhance the instructional competence of the Grade 7 Science teachers in Binmaley, Bugallon, and Lingayen, Schools Division Office I, Pangasinan?

METHODOLOGY

This chapter deals with the methods and procedures of the study. It deals with gathering of data needed to answer the problems identified in the study. It describes the research design, sources of study, instrumentation and data collection and tools for data analysis which were utilized by the researcher in conducting the study.

The description of data includes the profile of the respondents in terms of personal characteristics: age and sex; professional characteristics: length of teaching experience, position, area of specialization and relevant seminars/trainings attended; level of instructional competence and problems being encountered by the teacher-respondents along knowledge of content, preparation and utilization of instructional materials, application of varied teaching strategies and preparation and utilization of assessment materials.

Research Design

The researcher used the descriptive-correlational research design. Descriptive research methods are used to define who, what, and where of human behavior and other psychological phenomena. The study deals not only in gathering and evaluating information but also in evaluating and analyzing the significance of the data on the Instructional Competence of Grade 7 Science Teachers in the Public Secondary Schools in Binmaley, Bugallon, and Lingayen. Both qualitative and quantitative methods will be applied for data analysis. The primary focus of the study is to evaluate the level of instructional competence of Science teachers and to design instructional competency development plan for Grade 7 Science teachers in relation to their profile and level of competence with respect to the knowledge of content, application of teaching strategies, utilization of instructional materials and assessment in teaching the K to 12 Basic Education Curriculum. Materials and documents available on teacher education and competence will be studied thoroughly and the researcher will use focused questionnaire as to its data collection tool.

Correlation will also be used since the study aims to correlate the instructional competence of the Grade 7 Science teachers and the problems encountered in teaching Science in the public secondary schools of Binmaley, Bugallon, and Lingayen during the school year 2023-2024.

Instrumentation and Data Collection

The researcher constructed a questionnaire as the primary tool to gather the necessary data for the study. Before the finalization and administration of the questionnaire, the researcher solicited suggestions from the adviser and people in authority, with expertise in Science and questionnaire – construction to help her in improving the language construction and content of the questionnaire.

The questionnaire was composed of two parts. Part I is the demographic profiles of the teachers in terms of personal characteristics: age and sex; professional characteristics: length of teaching experience, position, area of specialization and relevant seminars/trainings attended; level of instructional competence and problems being encountered by the teacher-respondents along knowledge of content, preparation and utilization of instructional materials, application of varied teaching strategies, and preparation and utilization of assessment materials.

The questionnaire will use a 4 – point Likert Scale to determine the teachers' level of instructional competence and problems encountered by the Grade 7 Science teachers along knowledge of content, application of teaching strategies, utilization of instructional materials and assessment. The scale and description are indicated below:

Scale	Range	Descriptive Equivalent
4	3.26-4.00	Highly Competent
3	2.51-3.25	Competent
2	1.76-2.50	Moderately Competent
1	1.00-1.75	Not Competent

Tools for Data Analysis

The empirical data and information collected through the questionnaires were collated, analyzed, and interpreted, which provided answers to the problems embodied in this study.

Frequency and percentage were used to determine the profile of the pre-service teachers in terms of personal characteristics: age and sex; professional characteristics: length of teaching experience, position, area of specialization and relevant seminars/trainings attended.

Weighted mean was used to determine level of instructional competence and problems being encountered by the teacher-respondents along knowledge of content, preparation and utilization of instructional materials, application of varied teaching strategies, and preparation and utilization of assessment materials.

Chi-square was used to test the significant relationship between the level of instructional competence and problems being encountered by the teacher-respondents. Using the formula $\chi^2 = \sum(O_i - E_i)^2/E_i$, Where: Chi-Square is denoted by χ^2, O_i = observed value (actual value) and E_i = expected value.

Pearson r was used to determine the correlation between the level of instructional competence of the Grade 7 Science teachers and the problems being encountered in teaching Science. Using the formula

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Where: r = Pearson correlation coefficient
x = Values in the first set of data
y = Values in the second set of data
n = Total number of values.

RESULTS AND DISCUSSION

The primary purpose of this descriptive-correlational quantitative research was to correlate the instructional competence of the Grade 7 Science teachers and the problems encountered in teaching Science in the public secondary schools of Binmaley, Bugallon, and Lingayen during the school year 2023-2024 towards the proposed instructional capability development plan.

This chapter analyzed the findings of the data obtained from the respondents of the study. This section provided a tabular and narrative presentation of the findings.

Profile of the Grade 7 Science Teachers

This section presents the profile of the pre-service teachers in terms of personal characteristics: age and sex; professional characteristics: length of teaching experience, position, area of specialization and relevant seminars/trainings attended.

Table 1a

Profile of the Grade 7 Science Teachers in Terms of Age

Age	Frequency	Percentage
25 years old and younger	0	0
26 to 35 years old	13	44.83
36 to 45 years old	14	48.27
46 to 55 years old	2	6.90
56 to 65 years old	0	0
Total	**29**	**100.00**

The table reveals that there are 13 or 44.83% of the respondents aged 26-35 years old, 14 or 48.27% responded that they are 36 to 45 years old and 2 or 6.90% aged 46 to 55 years old. There are no respondents that ages 25 years old and younger and 56 years old and older. The data shows that majority of the Science teachers ages from 36 to 45 years old.

In the study made by Martin and Smith (1990) as cited by Ismail, et al. (2018) entitled "Effects of teachers' age and gender on student perception" conducted in Turkey shows that middle-aged teachers were more effective in communication, classroom organization, and competence. Alufohai and Ibhafidon (2015) conducted a study in Edo State, Nigeria which revealed that middle-aged teachers of between the ages of 36 to 48 years old were more effective to produce higher students' score than younger and older teachers. Their findings also found that the younger teachers of between the ages of 21 and 34 years old were more effective, produced higher student scores than the older ones of between the age of 49 years and above. In addition, Chiang and Wang (2014) as cited by Canuto, et al. (2024) showed that teachers above the age of 30 exhibited a greater inclination toward autonomous decision-making in the field of education as compared to other age groups.

Sex. Table 1b below presents the frequency and percentage distribution of the Grade 7 Science teachers under the criteria sex.

Table 1b

Profile of the Grade 7 Science Teachers in Terms of Sex

Sex	Frequency	Percentage
Female	20	68.97
Male	9	31.03
Total	**29**	**100.00**

Table 1b shows the profile of the Grade 7 Science in terms of sex. Based on the data presented, 68.97% of respondents were female and 31.03%, were male. The result shows that majority of the respondents are female.

In the study conducted by Maji (2022) published in the International Journal of Research Publication and Reviews on the basis of analysis and assessment of data reveals that competency of female teachers is higher than the male teachers. It may be due to the basic nature of females as they are very altruistic, caring, understand child psychology better and expert in handling children.

Length of Teaching Experience. Table 1c indicates the frequency and percentage distribution rate of the grade 7 teachers in terms of length of experience in teaching Science.

Table 1c

Profile of the Grade 7 Science Teachers in Terms of Length of Teaching Experience

Length of Teaching Experience	Frequency	Percentage
10 years and shorter	10	34.48
11 – 20 years	15	51.73
21 – 30 years	4	13.79
31 years and longer	0	0.00
Total	**29**	**100.00**

It can be viewed from the table that 10 or 34.48% of the respondents have been teaching Science for 10 years or shorter, 15 or 51.73% of the respondents is teaching Science for 11 – 20 years, and 4 or 13.79% of the respondents is teaching Science for 21 – 30 years. No respondents have been teaching Science for 31 years and longer. This signifies that majority of the respondents have been teaching Science for 11-20 years.

Teaching Position. Table 1d shows the profile of the grade 7 science teachers in terms of teaching position.

Table 1d

Profile of the Grade 7 Science Teachers in Terms of Teaching Position

Teaching Position	Frequency	Percentage
Teacher I	4	13.79

Teacher II	0	0.00
Teacher III	22	75.86
Master Teacher I	3	10.35
Master Teacher II	0	0.00
Total	**29**	**100.00**

It can be gleaned from the table that 13.79% (4) of the respondents are Teacher I,75.86% (22) are Teacher III and 10.35% (3) of the respondents are Master Teacher I. No respondents fall on Teacher II and Master Teacher II position. The data shows that majority of the respondents are Teacher III.

Area of Specialization. Table 1e reveals the profile of the grade 7 science teachers in terms of area of specialization.

Table 1e

Profile of the Grade 7 Science Teachers in Terms of Area of Specialization

Area of Specialization	Frequency	Percentage
Science	23	79.31
Other related areas	6	20.69
Total	**29**	**100.00**

The table 1e shows that there are 23 or 79.31% of the respondents took Science as their area of specialization in their bachelor's degree while 6 or 20.69% of the respondents took other area of specialization in their bachelor's degree. This means that dominant of the respondents is specialized in Science.

Relevant Trainings/Seminars Attended Table 1f on the next page demonstrates the frequency and percentage rate distribution of the grade 7 Science teachers in terms of the relevant trainings/seminars attended (for the last 3 years).

Table 1f

Profile of the Grade 7 Science Teachers in Terms of Relevant Trainings/Seminars Attended

Number of Relevant Trainings/Seminars Attended	Frequency	Percentage
School Level	20	23.53
Division Level	35	41.18
Regional Level	15	17.65
National Level	10	11.76
International Level	5	5.88
Total	**85**	**100.00**

The data shows a spectrum of engagement in trainings and seminars attended by the Grade 7 Science teachers where majority of which are held at the Division Level.

Article IV, Section 3 of the Code of Ethics for Professional Teachers states that "every teacher shall participate in the Continuing Professional Education (CPE) program of the Professional Regulation Commission and shall pursue such other studies as will improve his efficiency, enhance the prestige of the profession, and strengthen his competence, virtues, and productivity in order to be nationally and internationally competitive.

Self-Perceived Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science

The preceding portion of this paper presented the profile of the twenty-nine (29) Grade 7 Science teachers covered by this research area in terms of their professional characteristics.

This section presents the self-perceived level of instructional competence of the grade 7 teachers in the teaching of science in answer to sub-problem no. 2.

Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science Along Knowledge on Content. Table 2a shows the level of instructional competence of the grade 7 teachers in the teaching of science along knowledge on content.

Table 2a

Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science Along Knowledge of Content

Instructional Capability	Mean	Descriptive Equivalent
1. Manifests confidence and firmness with every information being given in the class.	3.59	HC
2. Highlights difficult parts of the lesson and make it easy to understand.	2.62	C
3. Explains the lesson by citing relevant and real – life examples and situations.	3.10	C
4. Readily defines important terms in the lesson.	3.17	C
5. Relates subject matter to previous topics and areas of interest.	3.24	C
6. Is able to relate lessons to other subjects.	3.24	C
7. Answers questions clearly with confidence.	2.48	MC
8. Cites current and timely information on the subject.	2.41	MC
9. Shows a full grasp of the lesson taught each day.	2.48	MC
10. Reflects mastery of the entire subject taught.	2.69	C
Average	**2.90**	**C**

Legend: 3.26-4.00=Highly Competent (HC), 2.51-3.25=Competent (C), 1.76-2.50=Moderately Competent (MC), 1.00-1.75=Not Competent (NC)

As gleaned in Table 2a, the level of the Grade 7 Science teachers' competence based on their self -ratings showed that on the average, the subject cases expressed self confidence that they are competent to teach Science among their Grade 7 learners. This is clearly pointed out by the computed average weighted mean of 2.90 which is within the range of limitation of 2.51 to 3.25 or "competent" in its adjectival rating.

From an analysis of the ten (10) items assigned to this domain, it appears that the Grade 7 Science teachers expressed a strong belief of their competence to manifest confidence and firmness with every information being given in the class as clearly

denoted by their average weighted mean of 3.59, so far, the highest among the weighted means in this domain. This fell under the descriptive equivalence of "highly competent".

The subject cases perceived that they are competent in determining or pinpointing complex parts of the lessons and in adopting appropriate measures to make such lessons easier for the learners to assimilate (item no.2); in explaining the lessons by giving relevant and real-life examples and situations and in unlocking predetermined words that are difficult for the learners to understand (items 3 and 4) as clearly shown by the average weighted means of 2.62, 3.10, and 3.17, respectively. Further, the subject-cases confessed that they are competent in relating subject matter to previous topics and areas of interest and are able to relate the present topic with those of other learning areas. These are clearly proven by the computed average weighted means of both 3.24 for items 5 and 6.

Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science Along Preparation and Utilization of Instructional Materials. Table 2b pictures the level of instructional competence of the grade 7 teachers in the teaching of science along preparation and utilization of instructional materials.

Generally, the Grade 7 Science teachers expressed confidence that they are competent in the preparation and utilization of instructional materials in the attainment of their learning objectives. This is clearly shown by their over-all average weighted mean of 2.55 or "competent" in its adjectival rating.

Table 2b

Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science Along Preparation and Utilization of Instructional Materials

Instructional Capability	**Mean**	**Descriptive Equivalent**
1. Knows the learning competencies in my learning areas in order to formulate appropriate instructional objectives.	3.24	C
2. Considers the principles of instructional material preparation for different types of learners.	2.34	MC
3. Aligns various technology and instructional materials suited for my learning area.	2.76	C
4. Selects and utilize updated and appropriate technology/instructional materials.	2.41	MC
5. Prepares adequate and appropriate instructional materials for the learners and the learning objectives.	2.41	MC
6. Manifests resourcefulness in preparing instructional materials.	2.69	C
7. Uses appropriate technology resources/instructional materials to achieve curriculum standards and objectives.	2.34	MC
8. Provides appropriate intervention activities/instructional materials for learner at risk.	2.24	MC
Average	**2.55**	**C**

Legend: 3.26-4.00=Highly Competent (HC), 2.51-3.25=Competent (C), 1.76-2.50=Moderately Competent (MC), 1.00-1.75=Not Competent (NC)

Drawn from their average weighted means particularly for items 1 and 3, one can safely conclude that it is basic for the teachers to be fully aware of the learning competencies they have to develop among their learners thus enabling them to formulate appropriate learning objectives. In their desire to attain each learning objective, the teachers were guided by the standards and principles in the preparation and utilization of various types of materials for different types of learners and in aligning various technology and instructional materials for the learning area.

Apparently, items and 1 and 3, obtained average weighted means of 3.24 and 2.76, respectively, which implied that the teachers are competent in the performance of such activities.

Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science Along Application of Varied Teaching Strategies. Table 2c mirrors the level of instructional competence of the grade 7 teachers in the teaching of science along the application of varied teaching strategies.

The minimum standards required for the effective implementation of the K to 12 curricula specifically in the teaching of Science include the teachers' full awareness of the various educational theories and their implications to meaningful learning.

Table 2c

Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science Along Application of Varied Teaching Strategies

Instructional Capability	**Mean**	**Descriptive Equivalent**
1. Organizes and presents subject matter clearly and coherently.	2.90	C
2. Uses motivation to catch the attention of the students.	2.55	C
3. Uses languages to effectively express ideas in class discussion.	2.76	C
4. Utilizes instructional materials that sustain students' attention in achieving the objectives.	2.59	C
5. Uses different teaching methods and activities to suit students' needs, ability and interest.	2.24	MC
6. Uses different teaching techniques, approaches, and strategies to make the lesson motivating and meaningful.	2.31	MC
7. Uses higher order thinking questions to encourages students to think critically and creatively.	2.48	MC
8. Relates lesson to relevant and real-life situations.	2.41	MC
9. Utilizes activities that caters individual differences.	2.34	MC
10. Utilizes activities that are helpful for students to understand the lesson.	2.45	MC
Average	**2.50**	**MC**

Legend: 3.26-4.00=Highly Competent (HC), 2.51-3.25=Competent (C), 1.76-2.50=Moderately Competent (MC), 1.00-1.75=Not Competent (NC)

The application of various pedagogical approaches to enable the fast learners to reach their full potential and to address the performance gap of the slow performing ones is of utmost importance in the achievement of meaningful learning. Sadly, the Grade 7 Science teachers expressed their belief that they fell short of satisfying the standards as clearly implied by their overall weighted mean of 2.50 which is within the descriptive equivalent of "moderately competent."

Analytically, the "moderately competent" response may mean that one half of the number of cases are either competent or incompetent. It could also mean that all of them are either in the border of competence and incompetence, meaning, the teachers are not in the best position to deliver the much needed professional services specifically the adoption of varied teaching strategies to fulfill the varying learning needs of the Grade 7 learners. The use of varied teaching strategies and techniques appropriate to the learners and subject matter has become the pipeline for meaningful learning and teachers should be adept in this aspect of instructional delivery.

Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science Along Preparation and Utilization of Assessment Materials. Table 2d shows the level of instructional competence of the grade 7 teachers in the teaching of science along preparation and utilization of assessment materials.

As reflected in Table 2d, the twenty-nine (29) Grade 7 science teachers showed confidence that on the average, they are competent in the preparation and utilization of assessment materials as clearly pointed out by their overall average weighted mean of 2.86.

Table 2d

Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science Along Preparation and Utilization of Assessment Materials

Instructional Capability	**Mean**	**Descriptive Equivalent**
1. Evaluates students' performances fairly and uses adequate and accurate standard measures of evaluation.	2.41	MC
2. Provides evaluative activities appropriate to students' abilities, interests and needs.	2.48	MC
3. Utilizes evaluation result as a basis for improving instruction.	3.24	C
4. Uses different methods in evaluating students' learning aligned to the learning objectives such as oral performance, projects, hands – on and others.	2.48	MC
5. Test items are based on the objectives in the curriculum guide as reflected in the actual discussions, activities, and classroom interactions.	3.24	C
6. Gives grades on the basis of students' actual performance.	3.66	HC
Average	**2.92**	**C**

Legend: 3.26-4.00=Highly Competent (HC), 2.51-3.25=Competent (C), 1.76-2.50=Moderately Competent (MC), 1.00-1.75=Not Competent (NC)

Expectedly, the teachers' level of competence along this domain is high as the required curriculum standards for this domain is the ability of the teachers to develop and use a variety of appropriate assessment strategies to monitor and evaluate learning, to construct valid and reliable test instruments and employ non-traditional assessment techniques appropriate for performance or outcomes-based teaching and learning.

Earlier, Valisno (2004) in her book wrote 9 challenges in education. Some of these focused on teachers' lack of knowledge about integrated teaching and assessing constructivism as a learning theory; classroom teaching that is centered on standardized tests. This observation establishes the fact that in the modern Science curriculum, the teachers need to be adept in the use of appropriate measures to determine the success or failure of meaning learning. For instance, Tyson posed some questions that make sense as far as effective assessment system is concerned, how do we educators move students from this low-level mind-set of just making good grades – or worse yet. From not even valuing their academic "graded" experiences at all-to personally experiencing the excitement that is the very essence of learning? How do we bring the culture of personal best into the academic experiences of the children? How do we move from an emphasis on remembering facts for a test on Friday to thinking critically about the larger issues? In a real sense, how can our Science teachers obtain most effective and accurate performance test results. These are the test results that show the desired student learning outcomes. This accurately shows how the learners understood, what they can demonstrate and what they can do after leaving their classroom. In the rational sense, the Science teachers should be highly competent not only to implement aligned teaching, learning and assessment but is adept in utilizing most appropriate assessment tool to ensure meaningful learning.

Summary. Table 2e reveals the summarized data on the self-perceived level of instructional competence of the grade 7 teachers in the teaching of science.

Finally, the summary of the self-perceived level of instructional competence of the Grade 7 Science teachers is presented and discussed in this section of the paper.

Generally, the twenty-nine (29) Grade 7 Science teachers as subject-cases of the study perceived that they are competent in the delivery of instructional services to their learners. This is denoted by the overall average weighted mean of 2.72.

Table 2e

Summarized Data on the Self-Perceived Level of Instructional Competence of the Grade 7 Teachers in the Teaching of Science

Domain	**Average Weighted Mean**	**Descriptive Equivalent**
Knowledge of Content	2.90	Competent
Preparation and Utilization of Instructional Materials	2.55	Competent
Application of Varied Teaching Strategies	2.50	Moderately Competent
Preparation and Utilization of Assessment Materials	2.92	Competent
Average	**2.72**	**Competent**

Legend: 3.26-4.00=Highly Competent (HC), 2.51-3.25=Competent (C), 1.76-2.50=Moderately Competent (MC), 1.00-1.75=Not Competent (NC)

Comparatively, the teachers were moderately competent in the application of varied teaching approaches which is one of the critical domains for meaningful learning. It is also apparent that although they perceived to be competent along knowledge of content, preparation and utilization of instructional materials and preparation and utilization of assessment materials, there are a lot of items that are crucial in the attainment of meaningful learning where the Science teachers were found to be moderately competent.

The aforementioned results imply a need to retool the Grade 7 Science teachers to make them ready to implement the 21st Science curriculum. The development program shall be based on the identified performance gap.

Problems Being Encountered by the Grade 7 Teachers and the Degree of Seriousness of Such in the Teaching of Science

This section of the paper presents the problems being encountered by the twenty-nine (29) Grade 7 teachers in the public secondary schools covered by this investigation. This is in answer to sub-problem no.3. The problems revolved around the four domains namely knowledge of content, preparation and utilization of instructional materials, application of varied teaching approaches and strategies and preparation and utilization of assessment materials. It may be recalled that through the administration of Likert-type-scale questionnaires and to determine the extent of seriousness of each problem, the respondents were instructed to choose or put a check mark under column "very serious" if the problem has been preventing them in the attainment of the learning objective from 90 to 100 percent, "serious," if it has been a barrier in the attainment of their learning objective from 80 to 89.99 percent, "moderately serious," if its adverse effect lies between 70 to 79.99 percent, and, "not serious." if its adverse effect in the attainment of their learning objectives ranges from 69.99 percent and lower.

Problems Being Encountered Along Knowledge of Content. As disclosed in Table 3a, the Grade 7 Science teachers encountered moderately serious problems on knowledge of content. The 2.41 average weighted mean manifested that the subject cases have been perturbed by problems they considered as moderately serious.

Table 3a

Problems Being Encountered by the Grade 7 Teachers on Knowledge of Content

Problems	Mean	Descriptive Equivalent
1. Knowledge Retention.	2.97	S
2. Inadequate grasps of concepts.	2.55	S
3. Limited application of learned principles to new situation.	2.24	MS
4. Incongruent teaching assignment with teacher's educational background.	2.31	MS
5. Alignment of learning activities with the required learning competencies	1.97	MS
Average	**2.41**	**MS**

Legend: 3.26-4.00=Very Serious (VS), 2.51-3.25=Serious (S), 1.76-2.50=Moderately Serious (MS), 1.00-1.75=Not Serious (NS)

From an individual examination of the items, it is obvious that the problems revolved around the learners' limited knowledge retention and inadequate grasps of concepts. This issue has been preventing the teachers to align the learning activities with the intended learning outcomes. As a result, the desired learning outcomes is barely met due to these issues that have prevented the teachers to perform very satisfactorily. All of these were clearly indicated by the computed average weighted means of 2.97 and 2.55 for items 1 and 2, respectively.

Problems Being Encountered on the Preparation and Utilization of Instructional Materials. Table 3b depicts the problems being encountered on the preparation and utilization of instructional materials.

Table 3b

Problems Being Encountered by the Grade 7 Teachers on the Preparation and Utilization of Instructional Materials

Problems	Mean	Descriptive Equivalent
1. Lack of quality textbooks and other learning materials.	3.52	VS
2. Lack of physical environment and technological facilities.	3.21	S
3. Limited knowledge in the use and operations of Science equipment and apparatuses.	1.31	NS
4. Lack of science equipment and apparatuses.	3.21	S
5.Limited prepared teacher – made instructional materials.	2.17	MS
Average	**2.68**	**S**

Legend: 3.26-4.00=Very Serious (VS), 2.51-3.25=Serious (S), 1.76-2.50=Moderately Serious (MS), 1.00-1.75=Not Serious (NS)

From a closer look at the data in Table 3b below, one will find out that overall, the Science teachers have been bothered by problems along the preparation and utilization of instructional materials which they considered as "serious". This is clearly denoted by their overall average weighted mean of 2.68.

Apparently, the subject-teachers viewed the lack of textbooks and other printed materials which can help them facilitate meaningful learning as a very serious problem (item no. 1) as indicated by their average weighted mean of 3.52.

Problems Being Encountered on the Application of Varied Teaching Strategies/Activities. Table 3c reflects the problems that have been preventing the Science teachers to deliver the highly expected extent of instructional services to their learners. Obviously, the overall average weighted mean of 2.12 meant that such problems related to this domain are moderately serious.

Table 3c

Problems Being Encountered by the Grade 7 Teachers on the Application of Varied Teaching Strategies/Activities

Problems	Mean	Descriptive Equivalent
1. Crowded classes.	1.52	NS

2. Application of the different teaching styles.	2.07	MS
3. Predominance of teacher – centered classrooms and teaching practices.	2.10	MS
4. Limited opportunity to attend in-service training activities to learn updated and advanced principles and concepts in the teaching of Science	2.21	MS
5. Limited provision of interactive teaching – learning experience.	2.69	S
Average	**2.12**	**MS**

Legend: 3.26-4.00=Very Serious (VS), 2.51-3.25=Serious (S), 1.76-2.50=Moderately Serious (MS), 1.00-1.75=Not Serious (NS)

From a scrutiny of the items, what has served as barriers to the teachers' competence to teach Science revolved around the predominance of teacher – centered classrooms and teaching practices and limited opportunity to attend in-service training activities to learn updated and advanced principles and concepts in the teaching of Science. They considered such problems as moderately serious as pointed out by the average weighted means of 2.10 for item number 3 and 2.21 for item number 4. The absence of relevant in-service training activities where teachers' knowledge and skills in teaching can be enhanced, has breed other problems like the teachers' inability to provide interactive teaching-learning experience (item no. 5). In fact, this problem has been considered by the teachers as serious.

Lumapenet, et al. (2022) stated that teachers with good instructional competency have a thorough understanding of pedagogy, allowing them to choose and implement the most appropriate teaching methods and strategies.

The aforementioned findings strongly suggest a need to develop and implement a three-year development plan which will address the identified problems. This study, therefore, is timely, needs-based and significant in the attainment of the schools; mandate to develop meaningful learning among our learners.

Problems Being Encountered on the Preparation and Utilization of Assessment Materials. Table 3d mirrors the problems being encountered by the Science teachers pertaining to the preparation and utilization of assessment materials.

Table 3d

Problems Being Encountered by the Grade 7 Teachers on the Preparation and Utilization of Assessment Materials

Problems	Mean	Descriptive Equivalent
1. Difficulty in assessing students' performance appropriately due to teachers; limited knowledge about performance assessment.	1.86	MS
2. Difficulty in assessing objectively and giving undeserved notes to the student.	2.03	MS
3. Limited time in the utilization of various assessment forms	3.03	S
4. Spending much time in assessing and difficulty in determining the quality of various students' performance tasks.	2.03	MS
5. Difficulty in aligning learning objectives with the assessment tool.	1.45	NS
Average	**2.08**	**MS**

Legend: 3.26-4.00=Very Serious (VS), 2.51-3.25=Serious (S), 1.76-2.50=Moderately Serious (MS), 1.00-1.75=Not Serious (NS)

At a glimpse, it is apparent that the problems that have been preventing teachers to handle the subject either competently or highly competent are not that serious. This is clearly denoted by the overall average weighted mean of 2.08. Though moderately serious, the problems have to be addressed outright to remove the barriers and enable the teachers to deliver the much desired quality instruction.

Apparently, of the 5 items assigned under this domain, item no, 3 (Limited time in the utilization of various assessment forms) has the highest weighted mean of 3.03 or "serious" in its adjectival rating. Earlier findings pointed out that seemingly, the teachers are still groping in the dark more particularly in utilizing various assessment forms and assessing their students' learning tasks. It was also discussed that most often the teachers are limited to the use of the teacher-made multiple choice test items. In this modern age of science and technology, other forms of testing shall be used to obtain the true picture of the learner's performance. Similarly, all the items under this domain revealed that the Science teachers fell uncomfortable in the preparation and utilization of varied assessment tools. This can be attributed to their limited training.

Summary. Table 3e reflects the summary of the data on the problems being encountered by the teachers in the teaching of Grade 7 Science.

On the average, the problems that have prevented the subject-teachers to perform either competently or highly competently, are moderately serious ones as clearly pointed out by the overall weighted mean of 2.32.

Comparatively, the domain "preparation and utilization of instructional materials," yielded the highest weighted mean of 2.68 or "serious" in its descriptive equivalence. In a rational sense, the problem cannot be blamed to the teachers' incompetence to develop self-made instructional materials in the absence of such in the classroom. This can be attributed to the inadequacy of learning resources being provided by the school.

Table 3e

Summarized Data on the Problems Being Encountered by the Grade 7 Teachers and the Degree of Seriousness of Such in the Teaching of Science

Domain	Average Weighted Mean	Descriptive Equivalent
Knowledge of Content	2.41	Moderately serious
Preparation and Utilization of Instructional Materials	2.68	Serious
Application of Varied Teaching Strategies	2.12	Moderately serious
Preparation and Utilization of Assessment Materials	2.08	Moderately serious
Average	**2.32**	**Moderately serious**

Legend: 3.26-4.00=Very Serious (VS), 2.51-3.25=Serious (S), 1.76-2.50=Moderately Serious (MS), 1.00-1.75=Not Serious (NS)

Though these problems as shown in the foregoing table are moderately serious only the teachers and school heads have reasons be alarmed as of their adverse effects in the delivery of quality instruction.

To close, education reforms must be comprehensive in light of global developments. Teachers must be prepared to take on new responsibilities in the face of global changes, new technologies, and emerging types of new learners. Teachers will always be at the center of educational reforms. They shall continue to play a critical role in initiating, adopting and implementing reforms. They can and should make a difference by inspiring and motivating our youth to succeed.

Relationship of the Profile of the Grade 7 Science Teachers and their Level of Instructional Competence. This section of the paper presents the relationship of the profile of the Grade 7 science teachers such as their age, sex, length of teaching experience, teaching position, area of specialization, number of relevant training activities and seminars attended and their level of instructional competence along the four (4) dimensions namely: knowledge of content, preparation and utilization of instructional materials, application of varied instructional strategies and preparation and utilization of assessment materials. This is in answer to sub-problem no. 4 and in testing the null hypothesis as stated in Chapter I. In determining the relationship of the aforementioned variables, the chi-square test was employed, and the relationship of such variables was set at the 0.05 level. In the interpretation, a computed chi-square value which is less than the tabled chi-square value at degrees of freedom 3 at the 0.05 level meant that no significant relationship between the two variables. On the other hand, a computed chi-square value which is greater than the tabular value meant that the variables being studied have a significant relationship.

Relationship of Age and the Level of Instructional Competence of the Grade 7 Science Teachers. Table 4 reflects the relationship of age and the level of instructional competence of the grade 7 science teachers

Table 4
Relationship of Age and the Level of Instructional Competence of the Grade 7 Science Teachers

Variable	Level of Competence	Computed Chi-Square Value	Tabular Chi-Square Valued at df;3 at the 0.05 level	Interpretation
Age	Knowledge of Content	5.456	7.815	Not Significant
	Preparation and Utilization of Instructional Materials	4.981	7.815	Not Significant
	Application of Varied Teaching Strategies	4.589	7.815	Not Significant
	Preparation and Utilization of Assessment Materials	3.872	7.815	Not Significant

Apparently, the computed chi-square value of 5.456 is less than the tabled value of 7.815 under “knowledge of content”. The aforesaid tabled value is the minimum significant value of significance at df;3 at the 0.05 level. This meant that the subject-cases’ age and their level of competence in the teaching of Science specifically those that involved their knowledge of content have no significant relationship. This finding simply implies that the competence or incompetence of the teachers along this area can be attributed to other factors, not their age.

This finding equates with the researcher’s belief that it is false to say that the competence of the teachers specifically along knowledge of content is significantly dependent upon their age. One popular saying goes “new broom sweeps well”, meaning, even the novice teachers can be as competent or even more competent than their older counterparts. In an ordinary parlance, younger teachers are ambitious to learn more and energetic to discover new concepts and ideas to enhance their competence in the delivery of their instructional functions.

Relationship of Sex and the Level of Instructional Competence of the Grade 7 Science Teachers. Table 5 data on the next page reveals the Relationship of Sex and the Level of Instructional Competence of the Grade 7 Science Teachers.

Table 5
Relationship of Sex and the Level of Instructional Competence of the Grade 7 Science Teachers

Variable	Level of Competence	Computed Chi-Square Value	Tabular Chi-Square Valued at df;3 at the 0.05 level	Interpretation
Sex	Knowledge of Content	6.234	7.815	Not Significant
	Preparation and Utilization of Instructional Materials	7.098	7.815	Not Significant
	Application of Varied Teaching Strategies	5.254	7.815	Not Significant

	Preparation and Utilization of Assessment Materials	3.912	7.815	Not Significant

The data in table 5 clearly point out that no significant relationship existed between variable sex and the level of competence of the Grade 7 Science teachers as indicated by the computed chi-square values 6.234 for Knowledge of Content, 7.098 for Preparation and Utilization of Instructional Materials, 5.254 for Application of Varied Teaching Strategies, and 3.912 for Preparation and Utilization of Assessment Materials which are less than the tabular value of 7.815, the assigned vale for significance at df; 3 at the 0,05 level. This accepted the null hypothesis.

Relationship of Length of Teaching Experience and the Level of Instructional Competence of the Grade 7 Science Teachers. Table 6 data highlights the Relationship of Length of Teaching Experience and the Level of Instructional Competence of the Grade 7 Science Teachers.

Table 6
Relationship of Length of Teaching Experience and the Level of Instructional Competence of the Grade 7 Science Teachers

Variable	Level of Competence	Computed Chi-Square Value	Tabular Chi-Square Valued at df;3 at the 0.05 level	Interpretation
Length of Teaching Experience	Knowledge of Content	8.213	7.815	Significant
	Preparation and Utilization of Instructional Materials	8.915	7.815	Significant
	Application of Varied Teaching Strategies	11.589	7.815	Significant
	Preparation and Utilization of Assessment Materials	9.674	7.815	Significant

Researches conducted in the past has revealed the association of work experience and workers' performance in the work field, that is, the longer a worker has in the workplace, the better is his/her performance. Accordingly, "experience provides the opportunity to learn and practice skills which can build competence overtime. Experience generally has a positive correlation with good performance, meaning that the more experience someone has in a particular field or role, the more likely he/she is to perform well. Through experience, individuals gain valuable knowledge, techniques and problem-solving skills that can be applied to new situations leading to better performance. *Harvard Business Review* ."

Experience provides opportunities to hone teaching skills, develop classroom management strategies, and learn from successes and failures. It also builds confidence and adaptability, allowing teachers to handle diverse situations and challenges in the classroom. Although, teachers who constantly reflect on their practice and seek opportunities for growth will likely develop greater competence than those who simply accumulate years in the classroom.

Relationship of Teaching Position and the Level of Instructional Competence of the Grade 7 Science Teachers. The data in Table 7 on the next page discloses the relationship of the teaching position and the level of the teachers' performance in the teaching of Science for Grade 7 learners.

Obviously, of the four dimensions related to their instructional functions, the variable teaching position has been found not significantly related to their teaching performance that dealt with the preparation and utilization of instructional and assessment materials as clearly indicated by the computed chi-square values of 6.435 for the first dimension and 6.765 for preparation and utilization of assessment materials, such computed values are less than the tabled value of 7.815 af degrees of freedom 3, at the 0.05 level, hence, the acceptance of the null-hypothesis.

Table 7
Relationship of Teaching Position and the Level of Instructional Competence of the Grade 7 Science Teachers

Variable	Level of Competence	Computed Chi-Square Value	Tabular Chi-Square Valued at df;3 at the 0.05 level	Interpretation
Teaching Position	Knowledge of Content	7.913	7.815	Significant
	Preparation and Utilization of Instructional Materials	6.435	7.815	Not Significant
	Application of Varied Teaching Strategies	9.754	7.815	Significant
	Preparation and Utilization of Assessment Materials	6.765	7.815	Not Significant

Significant relationship existed between the teachers' teaching position and their level of instructional competence specifically along knowledge of content and in the application of various teaching strategies. This is clearly indicated by the computed chi-square values of 7.913 for the first dimension and 9.754 for the second dimension, both computed values are greater than the tabular value of the chi-square at the 0.05 level, thus, rejecting the null hypothesis.

Relationship of Area of Specialization and the Level of Instructional Competence of the Grade 7 Science Teachers. The data in Table 8 picture the relationship of variable "area of specialization" and the level of instructional competence of the Grade 7

Science teachers. From the data, it is apparent that significant relationship existed between these variables, meaning the level of competence of the Science teachers is significantly dependent upon their area of specialization. The data are enough to reject the null hypothesis.

Table 8

Relationship of Area of Specialization and the Level of Instructional Competence of the Grade 7 Science Teachers

Variable	Level of Competence	Computed Chi-Square Value	Tabular Chi-Square Valued at df;3 at the 0.05 level	Interpretation
Area of Specialization	Knowledge of Content	8.213	7.815	Significant
	Preparation and Utilization of Instructional Materials	8.915	7.815	Significant
	Application of Varied Teaching Strategies	11.589	7.815	Significant
	Preparation and Utilization of Assessment Materials	9.674	7.815	Significant

There was a time in the past when the DepEd gave priority for employment those who are Physics and Science teachers because of the dearth of these professionals in the educational field. Lamentably, the situation which calls for the teachers to handle learning areas where their areas of training and orientation are suited, is still the same. Because of this, some secondary schools still have teachers handling subjects which are not their major of specialization.

Unlike in the elementary level where teachers are multi-subject teachers, the secondary school is supposed to assign a learning area to a teacher whose major of specialization is in that particular area. If not, that cycle of "blind leading the blind" continues especially if there are no training activities that will be implemented as a remedial measure.

Relationship of Relevant Trainings/Seminars Attended and the Level of Instructional Competence of the Grade 7 Science Teachers. Table 9 on the next page highlights the Relevant Trainings/Seminars Attended and the Level of Instructional Competence of the Grade 7 Science Teachers.

It has been universally accepted that among the programs that have to be implemented to ensure success in the operation of any agency in government, is the adequate and relevant training activities of the workforce.

Even those in the upper echelon of all offices in all organizations are not exempted from attending various training activities or they will be left behind.

Table 9

Relationship of Relevant Trainings/Seminars Attended and the Level of Instructional Competence of the Grade 7 Science Teachers

Variable	Level of Competence	Computed Chi-Square Value	Tabular Chi-Square Valued at df;3 at the 0.05 level	Interpretation
Relevant Trainings/ Seminars Attended	Knowledge of Content	8.213	7.815	Significant
	Preparation and Utilization of Instructional Materials	8.915	7.815	Significant
	Application of Varied Teaching Strategies	11.589	7.815	Significant
	Preparation and Utilization of Assessment Materials	9.674	7.815	Significant

To set the tone and put everything in place with the expectation that the school will highly perform according to its mandate, it shall continue to train its manpower with the end view of producing God-fearing, productive, self-reliant and globally competitive individuals in the world of work.

Correlation Between the Level of Instructional Competence of the Grade 7 Science Teachers and the Problems Being Encountered in the Teaching of Science. The correlation of the problems being encountered in the teaching of Science and the level of competence of the teachers in the
teaching of this learning area is analyzed and the data are presented below.

Table 10
Correlation Between the Level of Instructional Competence of the Grade 7 Science Teachers and the Problems Being Encountered in the Teaching of Science

Variable	Computed value of p	Interpretation
Level of Instructional Competence Along Knowledge of Content/ Degree of Seriousness of the Problems Being Encountered by the Teachers	0.43	Moderate Correlation
Level of Instructional Competence Along the Preparation and Utilization of Instructional Materials/Degree of Seriousness of the Problems Being Encountered by the Teachers	0.56	Moderate Correlation
Level of Competence Along the Application of Varied Teaching Strategies/Degree of Seriousness of the Problems Being Encountered by the Teachers	0.49	Moderate Correlation
Level of Competence Along the Preparation and Utilization of Assessment Materials/Degree of Seriousness of the Problems Being Encountered by the Teachers	0.51	Moderate Correlation

Range		Interpretation
0 to ± 0.20	=	Negligible correlation
0.20 to ± 0.40	=	Low Correlation
0.40 to ± 0.70	=	Moderate Correlation
0.70 to ± 1.00	=	High to very high Correlation

From the ordinary man's point of view, in any organization, challenges and obstacles linger. Every operational month or even day, the system is wrapped with various problems, a reason why organizational leaders and managers must be equipped with decision and problem-solving skills.

In the researcher's desire to investigate the correlation of the problems being encountered by the Science teachers along knowledge of content, preparation and utilization of instructional materials, application of varied instructional strategies and preparation and utilization of assessment materials, the researcher employed Pearson-r to determine the correlation of the subject variables.

Summary

This study attempted to assess the level of the Grade 7 Science teachers' instructional competence along knowledge of content, preparation and utilization of instructional materials, adoption of varied teaching strategies and approaches and preparation and utilization of assessment materials. The researcher used the descriptive-correlational research design since it employed the descriptive method of investigation in finding for the significant relationship between the profile of the Grade 7 science teachers and their instructional competence level and the significant relationship between the instructional competence of the Grade 7 Science teachers and the problems encountered in teaching Science. The study specifically looked into the profile of the Grade 7 Science teachers in terms of their personal attributes that included their age and sex and their professional characteristics that included their length of teaching experience, position, area of specialization and relevant seminars/trainings attended. Further, it looked into the level of instructional competence in the teaching of Science specifically along knowledge of content, preparation and utilization of instructional materials, application of varied teaching strategies and preparation and utilization of assessment materials. Moreover, the study attempted to specify the problems being encountered by the Grade 7 teachers in the teaching of Grade 7 Science, specifically along the four (4) afore-cited domains. Based on its findings, the study proposed an instructional capability development plan that may enhance the instructional competence of Grade 7 science teachers in the public secondary schools covered in this research area. The proposed development plan may be implemented beginning school year 2024-2025 to school year 2026-2027.

To answer the research problems, twenty-nine (29) Grade 7 public secondary schools during school year 2023-2024 in the municipality of Binmaley, Bugallon and Lingayen, Province of Pangasinan were employed as respondents of the study. The number represents 100 percent of the population of Grade 7 teachers handling the aforementioned subject. Frequencies that were converted into percentages and average weighted means were the statistical tools used to analyze the data drawn from the questionnaires.

Conclusions

Based on the summary of the study, the following conclusions were drawn:

1. Generally, the teachers are qualified to teach Science based on the analysis of their personal and professional attributes although, a number of the teachers are not major in Science. This gap however, can be addressed by crafting and implementing instructional development programs which are aligned and needs-based. This will ascertain teachers' quality instructional delivery.
2. Generally, the Grade 7 Science teachers fell short of the desired level of instructional competence in the four domains of teaching, learning and assessment. This if not properly addressed, prevents the successful implementation of the K to 12 Science curriculum.
3. The desired high level of instructional competence of the Science teachers is being hampered by problems that are either serious or moderately serious.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are hereby presented:

1. The identified areas where the teachers manifested difficulty or showed weakness in the delivery of quality instruction should be looked into and addressed for the Science program to achieve its objectives.
2. School heads shall allocate funds from the maintenance and other operational expenses or look for other financial sources for the implementation of the three-year development plan whose objective is to enhance the instructional competence of the Science teachers. Prior to the implementation, a series of orientation shall be made to clarify important matters relevant to its implementation.
3. The problems identified by the respondents as "serious" or "moderately serious" should be addressed effectively.
4. Effective monitoring and evaluation relative to the implementation the development plan shall be undertaken to determine the impact of the program implementation.

REFERENCES

Alufohai, P.J. & Ibhafidon, H.E. (2015). Influence of teachers' age, marital status and gender on students' academic achievement. Asian Journal of Educational Research, 3(4), 60-66.

Asis, J.M.N, Caballes, D.G, & Ortiz, O.E. (2023). Instructional competence of public secondary school teachers in the district of Naic: Basis for instructional enhancement program. Polaris Global Journal of Scholarly Research and Trends, 2(1), 38-57.

Bogo, N. J., & Aperocho, M. D. (2023). Teachers' Profile as Predictor of Teaching Competence and Students' Academic Achievement in Science

Canuto, P., Choycawen, M. & Pagdawan, R. (2024). The influence of teaching competencies on teachers' performance and students' academic achievement in primary science education

Dela Fuente, J. A. (2021). Contributing factors to the performance of pre-service physical science teachers in the Licensure Examination for Teachers (LET) in the Philippines. Journal of Educational Research in Developing Areas, 2(2), 141-152.

Ezeudu, S., & Utazi, O. (2014). Influence of Area of Specialization and Years of Teaching Experience of Geography Teachers on their level of Competency Performance in Teaching Map Work in Secondary Schools in Kogi State.

Hasanodin, H., & Arazo, V. (2024). Competencies and Performance of Teachers in Balo-I District

Hattie, J. (2009). Visible learning: A synthesis of over 800 meta-analyses related to achievement. New York, NY: Routledge.

Ismail, R., Arshad, R. & Abas, Z. (2018). Can Teachers' Age and Experience influence Teacher Effectiveness in HOTS?

Lumapenet, H.T, Salim, N.M., Salik, M.B. & Dilangalen, A.K. (2022). Teachers' Knowledge on Modern Pedagogy and Teaching Readiness

Maji, P.K. (2022). Effect of Gender and Age on Teaching Competencies of the Undergraduate College Teachers

Malahay, R. (2021). Area of Specialization and Teaching Performance of the Secondary Science Teachers in Negros Oriental, Philippines

Pacuno, N. & Sanchez, A. (2020). Teacher Instructional Competence and Learners Performance in Social Studies: Basis for Enhancement Program

Pranoto, Y.K.S, Utami, D.R.F., & Latiana, L. (2021). Do Teachers' Experiences and Ages Contribute to Their Teaching Performance?

Queroda, P. (2020). Instructional Competencies of Catholic School Teachers in Pangasinan, Philippines.

Ramirez, I.A. (2020). Teaching Preparedness of Pre-Service Teachers: Perception to Practice

Sadik, F., & Akbulut, T. (2015). An evaluation of classroom management skills of teachers at high schools (Sample from the City of Adana). Procedia - Social and Behavioral Sciences, 191, 208–213.

Savellano, J. M. (2008). Leader Education

Unal, Z., & Unal, A. (2012). The impact of years of teaching experience on the classroom management approaches of elementary school teachers. International Journal of Instruction, 5(2).

Wang, S. Y. (2021). The Path Choice of Strengthening the Cultivation of Intrinsic Motivation for Teacher Development. Educational Research

Waseka, E. L., Simatwa, E. M. W., & Okwach, T. (2016). Influence of teacher factors on students' academic performance in secondary school education. A case study of Kakamega County, Kenya. Greener Journal of Educational Research, 6(4), 151–169.

Zou, Y., & Chen, H. (2021). Research on the essence and dimension construction of learning ability. Journal of Northeast Normal University (Philosophy and Social Sciences), 314(06), 156-162.