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ENHANCING PROFESSIONAL DEVELOPMENT AND ITS RELATED INFLUENCES ON THE PERFORMANCE OF MATHEMATICS TEACHERS IN SELECTED SECONDARY PUBLIC SCHOOLS IN THE FIRST CONGRESSIONAL DISTRICT IN THE PROVINCE OF BATANGAS

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ABSTRACT

The main objective of this study was to determine the assessment of enhancing professional development and its related influences on the performance of Mathematics teachers.

The respondents of this study were sixty-four (64) Mathematics teachers in selected secondary public schools in the first congressional district in the Province of Batangas.

The main instrument used in this study was a questionnaire composed of an assessment checklist adept enough on the necessary data needed. The data gathered were tabulated, analyzed, and interpreted using Frequency Counts and Percentage; Weighted mean, Standard Deviation and Ranking; t-test, f-test, Post Hoc Analysis; and Pearson r-coefficient correlation.

The study yielded the following findings: teacher-respondents were, generally, in age bracket from 20-30 years old, majority of whom were female, married, educationally qualified having MA/MS units and experienced Teacher I-III for 1-10 years in service. Teachers assessed the enhancing professional development and its related influences on their performance based on their level category. The study showed the following results: (a) no significant difference between the assessment in enhancing professional development in terms of reading professional books and magazines, attending INSET, seminars and conferences, and attending graduate studies and the profile of the respondents; (b) significant difference in the assessment of the respondents'

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educational attainment and position; (c) no significant difference between the assessment of related influences and profile in the performance of Mathematics' teachers in terms of encouragement of colleagues, support from the family and promotion to a higher positon; (d) significant difference when respondents' educational attainment and position were considered; (e) no significant difference in the challenges experienced by the respondents in enhancing their professional development when grouped according to their profile; (f) no significant differences in the opportunities received by the respondents between the enhancement of professional development and their profile except the teachers' position which was significant; (g) significant relationship between enhancing professional development and the related influences in the performance of Mathematics teachers, and the challenges experienced in enhancing professional development and opportunities received by the respondents.

Keywords: *Professional Development, Performance, Mathematics Related Influences, Challenges, Opportunities*

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Introduction

Education in the 21st century has been defied with several challenges in response to the national reforms in educational systems, developing global standards and preferred learning outcomes for the students. From a global perception, most of these reform efforts are directed towards the teacher as the key driver of successful curriculum implementation (North et al., 2014).

To propose for the mastery of learning making learners more prepared for the field of work, Philippine basic education has undergone several modifications in the curriculum areas. Changes within the Philippine educational system have been constantly implemented by the Department of Education to enhance its global competitiveness and bring the country up to international standards. And the most astounding among these changes in the Philippine educational system is the implementation of the K to 12 curricula. The Philippine Department of Education holds a solid stand that the K-12 curriculum will be the key solution in enduring crises faced by the country's basic education particularly in enhancing the professional development of Mathematics teachers. The Philippine government indeed believes that this change in the basic education cycle improves education outcomes.

Despite of the transformation strategy of the Department of Education to enhance the quality of basic education through K-12 Program, running for seven years after the government implemented the new educational system last 2012, the question still remains: Are the K to 12 teachers able to demonstrate an understanding of such change of the current development in education?

The lack of training and seminars and unclear standard operating procedures are some of the difficulties encountered in the implementation of the K to 12 curricula since teachers are still striving in adhering to the standards and principles of the K to 12 curricula in the Philippines. Challenge was drawn in supporting teachers in mastering a new curriculum and introducing student-centered inclusive pedagogy (Braza and Supapo, 2014).

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The K to 12 curricula should adequately respond to local needs while allowing graduates to maximize job opportunities beyond boundaries by reducing jobs-skills mismatch and better preparation for higher learning and achieve education for all, but, still an issue and challenge for 21st century trends in Philippine education emerge while upgrading teachers' competence in teaching the new curriculum (Careeon, 2018).

The 21st century Mathematics teachers must be well-informed with content knowledge of the K to 12 curricula as current development in the education system. Teachers as agent for transformational change must demonstrate a deep understanding of the highlights of the K to 12 curricula. For this to occur, teachers must have the desire to continuously learn new and improved skills. Teachers are being encouraged to participate in a variety of programs that are more likely to lead to significant and sustained improvement in students' opportunities to learn. Thus, there is a need to enhance the competency-based teacher standards to carry out a high performance of their roles and responsibilities as a key to realize the imperatives of the K to 12 curriculum program.

National Adoption and Implementation of the Philippine Professional Standards for the teacher (D.O. no. 42, s. 2017) was released to recognize the importance of professional standards in the continuing professional development and advancement of teachers. Through PPST, there is a systematic way to measure the quality of the teachers who are expected to develop holistic learners who are functionally literate through the acquisition of enough skill, knowledge, and competencies that they can use in the real world.

The PPST framework was brought about changing the character of the 21st-century learner necessitates the improvement and the result of the call for the rethinking of National Competency-Based Teacher Standards (NCBTS). PPST aims to have a clear expectation of teachers. It aims to produce quality and effective teachers by enhancing the qualification of teachers and developing their level of knowledge, practice and professional commitment. PPST also serves as the foundation for all learning and development of teachers to ensure that teachers

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are properly equipped to effectively implement the K to 12 programs. Because of its uniformity, PPST is a great tool to assess teachers' performance, their needs, and what are the things that are needed to be done to support the teachers in their professional development. If executed and used properly, it ensures that teachers are properly equipped as they venture in facilitating classroom interactions under the K to 12 Program.

Some Mathematics teachers take the initiative to engage in professional development because they believe they must meet the goals, such as earning a master's degree, new knowledge and skills to better serve their students, or additional qualifications to prepare for another position. For these reasons, additional research on enhancing the professional development of mathematics teachers is essential.

It is interesting to investigate how selected secondary school from the first congressional district practice professional development that aim to develop and support successful Mathematics teachers by nurturing their knowledge, attitudes, and competencies in terms of curriculum, instruction, and assessment in their work stations.

Therefore, the researcher was prompted to determine the assessment on enhancing professional development and its related influences on the performance of Mathematics teachers in selected secondary public schools in the first congressional district in the Province of Batangas.

MATERIALS AND METHODS

This presents procedures that were employed by the researcher in gathering data. It also includes the research design, local and respondents of the study, research instrument, construction and validation of the instrument, data gathering procedure and statistical treatment of the data.

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Research Design

This study used the descriptive-quantitative methods of research. According to Bautista (2016), descriptive-quantitative method of research was suited to use in this study to evaluate the responses of Mathematics teachers on the challenges experienced, opportunities receive and the assessment in enhancing professional development and related influences on the performance of mathematics teachers,

This study also utilized a descriptive comparative research. Salkind (2010) cited comparative design is a research design that seeks to find relationships between independent and dependent variables after an action or event has already occurred. Descriptive Comparative was suited to use in this study to measure how significant is the difference in the assessment of the respondents in enhancing their professional development when profile is considered; the difference on the related influences in the performance of mathematics teachers when profile is considered; the difference in the challenge experienced by the respondents in enhancing their professional development when they are grouped according to their profile and the difference in the opportunities receives by the respondents in enhancing their professional development.

The researcher also used a descriptive correlation method. Stangor (2011) stated that descriptive correlational research designs measure two or more relevant variables and assess a relationship between or among them. This was suited to use in the study to identify the relationship between enhancing professional development and related influences in the performance of mathematics teachers and the relationship between the challenges experienced in enhancing professional development and opportunities received by the respondents.

The descriptive information is obtained through the use assessment checklist adept enough on the necessary data needed in the study.

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Locale of the Study

There are eight (8) municipalities in the first congressional district in the Province of Batangas. Among these, the study was conducted in four (4) municipalities namely Lemery, Calaca, Balayan, and Tuy. There are four (4) secondary public schools in Lemery, six (6) in Calaca, three (3) in Balayan and four (4) in Tuy. One school per municipality were chosen through purposive sampling. These include the following big/mega category secondary public schools: Governor Feliciano Leviste Memorial National High School in Lemery, Dacanlao Gregorio Agoncillo National High School in Calaca, Balayan National High School in Balayan, and Jose Lopez Manzano National High School in Tuy. All the selected schools were included in the study to get more reliable data.

Respondents of the Study

The respondents of the study were sixty-four (64) Mathematics teachers from the selected secondary public school in the first congressional district in the Province of Batangas. The respondents were twenty-four (24) Mathematics teachers from Governor Feliciano Leviste Memorial National High School, fourteen (14) from Dacanlao Gregorio Agoncillo National High School, nineteen (19) from Balayan National High School, and seven (7) from Jose Lopez Manzano National High School.

Research Instrument

The main instrument used in this study was a questionnaire. Part I dealt with the teacher profile covered the demographic information about the respondent's age, gender, civil status, educational attainment, length of service and position. Part II dealt with the assessment of the teachers in enhancing their professional development such as reading professional books and magazines, attending in-service training, seminars and conferences and attending graduate studies. Part III dealt with the related influences of Professional development in the performance of Mathematics teachers such as encouragement of colleagues, support of the family and

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promotion to a higher position. Part IV and Part V dealt with challenges experienced and opportunities received by the teachers with regard in enhancing their professional development, respectively.

The self –made questionnaires aimed to determine the relationship of assessment in enhancing professional development and related influences on the performance of mathematics teachers.

The Likert scale format was utilized using the following continuum: Strongly Agree (5), Agree (4), Undecided (3), Disagree (2), and Strongly Disagree (1).

Construction, Validation, and Test of Reliability of the Questionnaire

The researcher took extensive reading of different research studies and samples of questionnaires to construct and to give substance to her questionnaire. Through the assistance and advice of her adviser, the researcher prepared the first draft of the questionnaire. After making it substantive in context, it was given to several knowledgeable persons to examine the content and construction per item and to give some suggestions before preparing its final copy.

The questionnaire was set for validation. It was validated by the Mathematics Head Teacher, Mathematics Master Teacher, and Mathematics teacher. To obtain an estimate of the internal consistency of the questionnaire, the researcher used the test of reliability in finding the validity and reliability of the questionnaire.

Statistics were utilized to get the reliability using Cronbach alpha. For the questionnaire regarding assessment of the teachers in enhancing their professional development in terms of reading professional books and magazines, attending in-service training, seminars and conferences and attending graduate studies received a Cronbach alpha value of 0.93; related influences of Professional development in the performance of Mathematics teachers in terms of encouragement of colleagues, support from the family and promotion to a higher position received a Cronbach alpha value of 0.94; challenges experienced by the teachers in enhancing their professional

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development received a Cronbach alpha value of 0.95; and opportunities in enhancing the professional development of the respondents received a Cronbach alpha value of 0.94. Statistics showed that the prepared questionnaires were reliable with overall reliability of 0.94 or 94%.

Data Gathering

At the start of the investigation, the researcher obtained substantial materials and information from different Mathematics books, reference materials, and published materials. The problems of this study were determined. The researcher made a census of the total population of Mathematics teachers from Governor Feliciano Leviste Memorial National High School, Dacanlao Gregorio Agoncillo National High School, Balayan National High School, and Jose Lopez Manzano National High School and gather the information and data regarding assessment in enhancing professional development and related influences in the performance of Mathematics teachers. Then the researcher started to prepare the questionnaire. The questionnaire was prepared by the researcher and it was given to several knowledgeable persons to examine its content and construction per item. The questionnaire was set for validation. Then the letter of request was forwarded to the principal of the said schools. Upon the approval, the researcher with the assistance of the Mathematics Head Teacher, the questionnaires were distributed to the respondents. The questionnaires were retrieved immediately and the data gathered were tallied, organized, tabulated, analyzed and interpreted using the appropriate statistical techniques.

Statistical Treatment of Data

Problem 1 Profile of the respondents

1.1. Frequency Counts and Percentage. These were used to determine the profile of the respondents.

Problem 2 Assessment of the respondents in Enhancing their Professional Development

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2.1 Weighted mean, standard deviation, and ranking. These were used to evaluate the assessment of the respondents in enhancing their professional development.

Problem 3 Related Influences in the Performance of Mathematics Teachers

3.1 Weighted mean, standard deviation, and ranking. These were used to assess the related influences in the performance of mathematics teachers.

Problem 4 Challenges experienced by the respondents with regard in Enhancing their Professional Development

4.1. Weighted mean, standard deviation, and ranking. These were used to evaluate the challenges experienced by the respondents with regard to enhancing their professional development.

Problem 5 Opportunities received by the respondents in Enhancing their Professional Development

5. 1. Weighted mean, standard deviation, and ranking. These were used to assess the opportunities received by the respondents in enhancing their professional development.

Problem 6 Significant Difference in the Assessment of the respondents in Enhancing their Professional Development when Profile is considered

6.1. t-test and f-test. These were used to determine the significant difference in the assessment of the respondents in enhancing their professional development when the profile is considered.

6.2. Post Hoc Analysis. This was used to determine the significant difference by category of the variables.

Problem 7 Significant Difference in the Related Influences in the Performance of Mathematics Teachers when Profile is considered

7.1. t-test and f-test. These were used to determine the significant difference in the related influences in the performance of mathematics teachers when the profile is considered.

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7.2. Post Hoc Analysis. This was used to determine the significant difference by category of the variables.

Problem 8 Significant Difference in the Challenge experienced by the respondents in Enhancing their Professional Development when they are grouped according to their Profile

8.1. t-test and f-test. These were used to determine the significant difference in the challenge experienced by the respondents in enhancing their professional development when they are grouped according to their profile.

Problem 9 Significant Difference in the Opportunities receive by the respondents in Enhancing their Professional Development

9.1. t-test and f-test. These were used to determine the significant difference in the opportunities received by the respondents in enhancing their professional development.

9.2. Post Hoc Analysis. This is used to determine the significant difference by category of the variables.

Problem 10 Significant Relationship between Enhancing Professional Development and Related Influences in the Performance of Mathematics Teachers

10.1. Pearson r coefficient correlation. This was used to correlate the enhancing professional development and related influences in the performance of mathematics teachers.

Problem 11 Significant Relationship between the Challenges experienced in Enhancing Professional Development and Opportunities received by the respondents

11.1 Pearson r coefficient correlation. This was used to correlate the challenges experienced by enhancing professional development and opportunities received by the respondents.

Problem 12 A Proposed Development Plan to further enhance the Professional Development of Mathematics teachers

12.1 A Proposed Development Plan to further enhance the Professional Development of Mathematics teachers was prepared by the researcher.

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RESULTS AND DISCUSSION

The data were analyzed and the following findings were formulated by the specific questions given under the statement of the problem:

1. Profile of the Respondents

1.1. **Age.** With age group 20-30 posted the highest frequency of 29 or 45.31 percent of the total 64 respondents. The other age groups posted the following frequencies: 18 or 28.13 percent for the age group 31-40; 9 or 14.06 percent for that of 41-50; and 8 or 12.50 percent for the age group 51-60.

1.2. **Gender.** It was clear that out of the total respondents investigated for this study, the overwhelming majority of a frequency of 57 with a percentage of 89.06 of them were female whereas only 7 with a percentage of 10.94 were male respondents.

1.3. **Civil Status.** It can be noted from the teacher-respondents' profile that 46 respondents with a percentage of 71.77 were married and the remaining 16 with a percentage of 25 were single, whereas both 1 with a percentage of 1.56 of the respondents were found to be widowed and separated.

1.4. **Educational Attainment.** Those who had units in MA/MS posted the highest frequency of 44 with a percentage of 68.75. Thirteen or 20.31 percent finished a Bachelor's Degree in teaching, while 6 or 9.38 percent were educated up to a Master's Degree. Finally, one or 1.56 percent had units in Doctorate.

1.5. **Length of Service.** Nineteen or 29.69 percent was garnered by those who had 1–5 years of service in teaching. Another frequency of 17 or 26.56 percent by those who had 6–10 years of service in teaching. Frequency of 12 or 18.75 percent who had 21–above years in service while the group with 11–15 years of service posted a frequency of 9 or 14.06

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percent. Finally, with the range of 16–20 years in service comprising 7 or 10.94 percent of the total respondents.

1.6. **Position.** It can be noted form the teacher-respondents' profile that 28 respondents with a percentage of 43.75 were Teacher III and remaining 26 with a percentage of 40.63 were Teacher I, whereas 4 Teacher II respondents with a percentage of 6.25 and 3 teacher-respondents with a percentage of 4.69 of the respondents were Master Teacher I and Master Teacher II.

2. Assessment of the respondents in Enhancing their Professional Development.

2.1. Teacher-respondents assessed the enhancement of their professional development in terms of reading professional books and magazines with a composite mean of 3.95 (S.D. = 0.893) interpreted as agree. It showed that teacher-respondents commonly agreed on reading articles, lesson plans, and resources from notable publishers and experts in the field of Mathematics education with a weighted mean of 4.11 (SD = 0.786) and ranked first. Teacher-respondents agreed on reading articles to learn new strategies to use in Mathematics class with a weighted mean of 4.04 (SD = 0.913) and ranked second. Teacher-respondents agreed on reading books, journals, and magazines that promotes progressional development in Mathematics education with a weighted mean of 4.00 (SD = 0.922) and ranked third. The lowest weighted mean of 3.64 (SD = .973) went to indicator #5, "Going online and joining a professional scholarly journal and reading educational blogs in Mathematics with a weighted mean of 3.64 (SD = .973) verbally interpreted as agree.

2.2. Teacher-respondents' assessed the enhancement of their professional development in terms of attending Seminars, Training, and Conferences with a composite of 4.20 (SD = 0.732) interpreted as agree. It could be noted from the table that teacher-respondents agreed with attending in-service training to enhance Mathematics skills and participating in workshops related to Mathematics educational fields with a weighted mean

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of 4.32 (SD = 0.704) and a weighted mean of 4.32 (SD = 0.685) respectively and ranked 1.5. Respondents agreed with attending math-related training characterized by work variations with a weighted mean of 4.18 (SD = 0.817) and ranked third. The lowest weighted mean of 4.05 (SD = 0.757) went to statement #4 "Attending seminars or lectures in the technical fields related to Mathematics developed curricula" interpreted as agree.

2.3. Teacher-respondents' assessed the enhancement of their professional development in terms of attending graduate studies with a composite mean of 4.04 (SD = 0.956) is verbally interpreted as agree. They assessed "Pursuing graduate schools for professional growth"; "Pursuing certificates, accreditations or other credentials through educational program" and "Continuing study in the Mathematics educational aspects". All indicators were interpreted as agree with the weighted mean of 4.19 (SD = 0.946), 4.08 (SD = 0.856) and 4.03 (SD = 0.950) respectively. The lowest weighted mean of 3.95 (SD = 0.920) went to indicator #2, 'Pursuing certificates, accreditations or other credentials through educational program' interpreted as agree.

3. Related influences in the Performance of Mathematics Teachers

3.1. Teacher-respondents' assessed how the encouragement colleagues influence the performance of Mathematics teachers with the composite mean of 4.38 (S.D. = 0.750) interpreted as agree. The findings revealed that teacher-respondents agree that their colleagues share the teaching methods used in class to centralized the teaching instructions were given to the students that increase the performance as a classroom teacher" with a weighted mean of 4.45 (S.D. = 0.705) and ranked first. Teacher-respondents believed that their colleagues support each other to finish the job given to us and work harmoniously in the department that increases our performance as effective teachers". Both indicators were interpreted as agree with a weighted mean of 4.43 (S.D. = 0.742) and ranked 2.5. The lowest weighted mean of 4.28 (S.D. = 0.803) went to indicator #5, "My colleagues encourage me

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to join on educational opportunities in and out of the workplace" is verbally interpreted as agree.

3.2. Teacher-respondents assessed the related influences in the performance of Mathematics teachers in terms of support from the family, with a composite mean of 4.28 (S.D. = 0.833) indicating agree, as observed on all the listed indicators. The item about, "My family supports me to continue to strengthen my practice throughout my career" obtains the highest and equal-weighted mean 4.35 (S.D. = 0.835) and ranked first. Meanwhile, respondents agreed that "My family supports me to engage in effective professional development focused on the skills educators need to address students' major learning challenges" provides a weighted mean of 4.34 (S.D. = 0.911) and ranked second. The item of, "My family supports me for a high-quality professional development that results in better teaching and higher student performance" provides a weighted mean of 4.31(S.D. = 0.757), interpreted as agree and ranked third. On the other hand, "My family supports me to ensure to constantly engage in continuous professional learning and apply that learning to increase my student achievement" reveals a weighted mean of 4.26 (S.D. = 0.861) while that of "My family supports me to learn the knowledge and skills necessary for more effectively address the identified student learning problems" gives with the weighted mean of 4.14 (S.D. 0.799).

3.3. Teacher-respondents assessed promotion to a higher position as related influence on their performance in Mathematics. This result could be related with the fact that the promotion can, therefore, be regarded as the passage to a higher rank. It is one of the reinforces of the rewards system to help motivating teachers. Therefore, teacher-respondents agreed that promotion to a higher position influences their performance with the composite mean of 4.30 (S.D. = 0.778). The fifth item, that of greater salary supplements/financial rewards indicated the highest weighted mean of 4.45 (S.D. = 0.743) while the third item, that of greater recognition and credibility posted the lowest weighted mean of 4.26 (S.D. = 0.777). The item that of, greater employment opportunities got a

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weighted mean of 4.34 (S.D. = 0.781). On the other hand, the item of and greater career advancement obtained a weighted mean of 4.32 (S.D.= 0.778).

4. **Challenges experienced by the respondents with regard for Enhancing their Professional Development**

Teacher-respondents assessed the challenges they experienced in enhancing their professional development. The composite mean of 3.60 (S.D. = 1.157) is verbally interpreted as agree, was manifested in all the listed indicators. It can be noted from the table that the item about, Professional development schedule conflicted with other school/professional activities obtained the highest weighted mean of 3.92 (S.D. = 1.004) and ranked first. The item that of, Professional development occurred outside of normal working hours provided a weighted mean of 3.85 (S.D. = 0.788) and ranked second. The same weighted mean of 3.70 (S.D. = 1.311 and 1.107) respectively, posted on the following items: Family responsibilities make it difficult for me to participate in the professional development activities beyond the workday and Professional development opportunities were too far away ranked 3.5. On the other hand, the seventh item, that of teachers do not think that the professional development would meet their needs posted the lowest weighted mean of 2.97 (S.D. = 1.260)

5. **Opportunities received by the respondents in Enhancing their Professional Development**

Teacher-respondents' assessed the opportunities in enhancing professional development with a composite mean of 4.46 (S.D. = 0.647) was verbally interpreted as agree, likewise manifested on the listed indicators. The highest weighted mean of 4.51 (S.D. = 0.625) is noted on the item, that of allowing teachers to perform better and prepare them for a position of greater responsibility. The item, that of helping teachers take steps on their own

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to open doors to advancement in their careers which often gives them greater professional satisfaction and more pay obtains a weighted mean of 4.50 (S.D. = 0.625) while that of enabling teachers to acquire new teaching methods and materials for Mathematics content area gets a weighted mean of 4.49 (S.D. = 0.646).

6. **Significant Difference in the Assessment of the respondents in Enhancing their Professional Development when Profile is Considered**

6.1. The result of the t-test and f-test revealed that in enhancing professional development in terms of reading professional books and magazines, no significant differences existed from the comparison on teacher-respondents' age, gender, civil status, and years in service. These findings were revealed by a computed *p*-value of 0.261 for age, 0.116 for gender, 0.102 for civil status and 0.118 for years in service which are all greater than the 0.05 level of significance set for this study, thus the null hypothesis is failed to reject. On the other hand, significant differences existed between the teacher-respondents' assessment in enhancing their professional development in terms of reading professional book and magazine concerning their educational attainment and position, as sustained by common computed *p*-value of 0.000, which was less than the 0.05 level of significance set for this study. These findings resulted in the rejection of the null hypothesis.

6.2. The result of the t-test and f-test revealed that in enhancing professional development in terms of attending seminars, training, and conferences, no significant differences existed from the comparison on teacher-respondents' age, gender, civil status, and years in service. These findings were revealed by a computed *p*-value of 0.283 for age, 0.216 for gender, 0.164 for civil status and 0.213 for years in service which are all greater than the 0.05 level of significance set for this study, thus the null hypothesis was failed to reject. On the other hand, significant differences existed between the teacher-respondents' assessment in enhancing their professional development in terms of attending seminars,

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training, and conferences concerning their educational attainment and position, as sustained by a computed *p*-value of 0.001 and 0.000 respectively, which was less than the 0.05 level of significance set for this study. These findings resulted in the rejection of the null hypothesis.

6.3. The result of the t-test and f-test revealed that in enhancing professional development in terms of attending graduate studies, no significant differences existed from the comparison on teacher-respondents' age, gender, civil status, and years in service. These findings were revealed by a computed *p*-value of 0.283 for age, 0.276 for gender, 0.126 for civil status and 0.165 for years in service which were all greater than the 0.05 level of significance set for this study, thus the null hypothesis was failed to reject. On the other hand, significant differences existed between the teacher-respondents' assessment in enhancing their professional development in terms of attending graduate studies concerning their educational attainment and position, as sustained by a computed *p*-value of 0.002 and 0.001 respectively, which was less than the 0.05 level of significance set for this study. These findings resulted in the rejection of the null hypothesis.

7. **Significant Difference in the Related Influences in the Performance of Mathematics Teachers when Profile is Considered**

7.1. The result of the t-test and f-test revealed that teacher-respondents' assessment in related influences in the performance of Mathematics teachers in terms of encouragement of colleagues when the profile was considered obtained a computed *p*-value*s* all greater than the 0.05 level of significance set for this study. Therefore, the null hypothesis was failed to reject. This indicated no significant differences existed from the comparison.

7.2. The result of the t-test and f-test revealed that teacher-respondents' assessment in related influences in the performance of Mathematics teachers in terms of support from the family when the profile was considered obtained computed *p*-value of 0.216 for age, 0.289 for gender, 0.213 for civil status and 0.143 for years in service which were all greater

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than the 0.05 level of significance set for this study, thus the null hypothesis was failed to reject. On the other hand, significant differences existed between the teacher-respondents' assessment in related influences in the performance of Mathematics teachers in terms of support from the family concerning their educational attainment and position, as sustained by a computed *p*-value of 0.003 and 0.001 respectively, which was less than the 0.05 level of significance set for this study. These findings resulted in the rejection of the null hypothesis.

7.3. The result of the t-test and f-test revealed that teacher-respondents' assessment in related influences in the performance of Mathematics teachers in terms of promotion to a higher position were revealed by computed *p*-value of 0.312 for age, 0.296 for gender, 0.304 for civil status and 0.210 for years in service which were all greater than the 0.05 level of significance set for this study, thus the null hypothesis was failed to reject. On the other hand, significant differences existed between the teacher-respondents' assessment in related influences in the performance of Mathematics teachers in terms of promotion to a higher position concerning their educational attainment and position, as sustained by a computed *p*-value of 0.002 and 0.001 respectively, which was less than the 0.05 level of significance set for this study. These findings resulted in the rejection of the null hypothesis.

8. **Significant Difference in the Challenge experienced by the respondents in Enhancing their Professional Development when they are grouped according to their Profile**

The result of the t-test and f-test revealed that teacher-respondents' assessment on the challenges experienced in enhancing professional development when the profile was considered got a computed *p*-value*s* all greater than the 0.05 level of significance set for this study. Therefore, the null hypothesis was failed to reject. This indicated no significant differences existed from the comparison.

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9. **Significant Difference in the Opportunities receive by the respondents in Enhancing their Professional Development**

The result of the t-test revealed that no significant differences existed from the comparison on teacher-respondents' assessment on the opportunities in enhancing professional development in terms of age, gender, civil status, educational attainment, and years in service. These findings were revealed by a computed *p*-value of 0.226 for age, 0.213 for gender, 0.226 for civil status, 0.165 for educational attainment, and 0.213 for years in service which were all greater than the 0.05 level of significance set for this study, thus the null hypothesis was failed to reject. These confirm that age, gender, civil status, educational attainment and years in service do not vary with the assessment on the opportunities in enhancing professional development. On the other hand, significant differences existed between the teacher-respondents' assessment in opportunities in enhancing professional development concerning their position, as sustained by a computed *p*-value of 0.002, which was less than the 0.05 level of significance set for this study. This finding resulted in the rejection of the null hypothesis. With the result, it implied that the assessment in the opportunities in enhancing professional development differs according to teachers' position.

10. **Significant Relationship between Enhancing Professional Development and Related influences in the Performance of Mathematics Teachers**

The result on the relationship on teacher-respondents' responses on enhancing professional development and related influences in the performance of Mathematics teachers obtained a computed *p*-value of 0.002 which was less than the 0.05 level of significance set for this study, the null hypothesis is rejected. Thus there was a significant relationship in enhancing professional development and related influences in the performance of Mathematics teachers.

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11. **Significant Relationship between the Challenges experienced in Enhancing Professional Development and Opportunities received by the respondents**

The result on the relationship on teacher-respondents' responses between challenges experienced and opportunities in enhancing professional development revealed a computed *p*-value of 0.000 which was less than the 0.05 level of significance set for this study, the null hypothesis is rejected. Thus there was a significant relationship between challenges experienced and opportunities in enhancing professional development

12. **Proposed Development Plan**

The development plan made by the researcher was considered to further enhance the professional development of Mathematics teachers.

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Development Plan to further Enhance the Professional Development of Mathematics Teachers

Properties for Action	Project Title	Objectives	Activity/ Strategies	Key Player	Time Frame	Resource	Performance Measure
Teachers Development	**ICREATE** (Inspire Co-workers to Respond Enthusiastically to Advocacies Targeting Excellence)	To enhance and develop the skills and abilities of teachers	**Math SEEK** (Scout Excellent, Experience and Knowledge) Participation in different seminars and workshops	Mathematics Teachers	Year-Round	Personal Fund	100% of Math teachers attend seminars and workshops.
		To grow professionally	**Math ACTS** (Alleviate teachers' Curiosity through pursuing graduate Studies) Enroll and finish graduate studies	Mathematics Teachers	Year-Round	Personal Fund	Some Math teachers enrolled in graduate schools.
		Widen the teachers' horizon as a profession	**Math ROCKS** (Read Relevant Occupational Compilation to Kindle Service) Subscribe to books and magazines	Mathematics Teachers	Year Round	Personal Fund	A well-rounded competent professionals.
		Develop competence and	**Math COFFEE BREAK**	Department Head	Year-Round	Personal Fund	Skillful and competent teachers

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		camaraderie among Math teachers	(Coaching For Fulfilling and Exceptional End) Peer teaching/ sharing of skills and techniques in teaching contexts and classroom management.	Mathematics Teachers			ready for different competitions.

CONCLUSIONS

Based on the findings of the study, the researcher came up with the following conclusions.

1. Teacher-respondents are, generally, in their early middle age bracket from 20-30 years old, majority of whom are female, married, educationally qualified having MA/MS units and experienced Teacher I-III for 1-10 years in service.

2. Teacher-respondents assess enhancing their professional development in terms of reading professional books and magazines, attending in-service training, seminars, and conferences and attending graduate studies in agree level category.

3. Teacher-respondents assess encouragement of colleagues, support from the family, and promotion to a higher position as related influences in the performance of Mathematics teachers in agree level category.

4. Professional development schedule conflicts with other school/professional activities, Professional development occurs outside of normal working hours, Family responsibilities make it difficult for me to participate in the professional development and Professional development

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opportunities are too far away are some of the challenges experienced by the teacher-respondents in enhancing their professional development.

5. Some of the opportunities in enhancing professional development agree by teacher-respondents are: it allows teachers to perform better and prepare them for position of greater responsibilities, it helps teachers take steps on their own to open doors to advancement in their careers which often gives them greater professional satisfaction and more pay, and it enable teachers to acquire new teaching methods and materials for Mathematics.

6. There is no significant difference in the assessment of teacher-respondents in enhancing their professional development in terms of reading professional books and magazines, attending in-service training, seminars, and conferences, and attending graduate studies when teacher-respondents' age, gender, civil status, and years in service are considered. However, there is a significant difference on the assessment of teacher-respondents in enhancing their professional development in terms of reading professional books and magazines, attending in-service training, seminars, and conferences, and attending graduate studies when teacher-respondents' educational attainment and position are considered.

7. There is no significant difference in the related influences in the performance of Mathematics teachers in terms of encouragement of colleagues when the profile is considered.

There is no significant difference in the related influences in the performance of Mathematics teachers in terms of support from the family and promotion to a higher position when teacher-respondents' age, gender, civil status and years in service are considered. However, there is a significant difference on the related influences in the performance of Mathematics teachers in terms of support from the family and promotion to a higher position when teacher-respondents' educational attainment and position are considered.

8. There is no significant difference in the challenges experienced by the respondents in enhancing their professional development when they are grouped according to their profile.

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9. There is no significant difference in the opportunities receives by the respondents in enhancing their professional development when teacher-respondents' age, gender, civil status, educational attainment and years in service are considered. However, there is a significant difference in the opportunities receives by the respondents in enhancing their professional development when the teacher-respondents' position is considered.

10. There is a significant relationship between enhancing professional development in terms of reading professional books and magazines, attending in-service training, seminars, and conferences, and attending graduate studies and the related influences in the performance of mathematics teachers in terms of encouragement of colleagues, support from the family and promotion to a higher position.

11. There is a significant relationship between the challenges experienced in enhancing professional development and opportunities received by the respondents.

12. The development plan is made by the researcher to further enhance the professional development of Mathematics teachers.

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