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Original Paper

Mathematics Teaching Competencies of Senior High School Teachers in the Lone Districts in the Province of Batangas City, Philippines: Basis for Direction on Continuing Education for the K to 12 Curriculum

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Abstract

Teaching competencies of the senior high school Mathematics teachers in Lone Districts in Batangas City Philippines were assessed. It looked into their personal and professional profile along with their teaching competencies which includes dedication to teaching, knowledge of subject matter, classroom organization and management, instructional organization and management, instructional implementation, and monitoring student progress and potential. Comparison of responses among administrators and mathematics teachers were also considered. Results of which were used as basis for direction on continuing education that can be pursued for the successful implementation of K to 12 Curriculum. The study used the descriptive method of research. Questionnaire was used as the main data gathering instrument. The entire population of mathematics teachers and administrator which comprise of 41 teachers and 21administrators in Lone Districts in the Province of Batangas City Division participated in the study. Frequency/percentage, weighted mean, and comparison of means were used to statistically treat the data. Majority of the Mathematics teachers were female and married while most of them were in age bracket of 29-35, have master's unit, teaching for 10 years and above and have attended at least 6-10 related seminars for the last 3 years. Generally, the mathematics teachers are competent as assessed by two groups of respondents. Same was found when mathematics teachers were grouped according to their profile variables where they were found to be more competent in monitoring student progress and potential but less competent in terms of knowledge of subject matter. The researcher recommended possible directions on continuing education that could be

pursued by the mathematics teachers thereby enhancing their competencies to ensure successful implementation of K to 12 Curriculum.

Keywords

continuing education, K to 12 Curriculum, Mathematics teaching, mathematics teaching competencies

1. Introduction

Education is never static. Mathematics Education as one of the areas in education is not spare from this phenomenon. The world of Mathematics teaching is undergoing dramatic changes. Pressures for reform coming from different sectors have come and one of the results to these pressures is the implementation of K to 12 Curriculum. K to 12 Curriculum is an education system under the Department of Education that aims to enhance learners' basic skills, produce more competent citizens, and prepare graduates for lifelong learning and employment. Undeniably, teachers and teacher educators have shown willingness to find better ways to teach all subjects including mathematics, but learning new ways is rather difficult. Each generation of students and teachers has seen changes in the content of school courses and the approaches used in teaching. The present generation is not spared from changes brought about by various national and global frameworks such as the K to 12 Reform, ASEAN Integration, globalization, and the changing character of 21st century learners necessitate the improvements of the teaching standards. Significant changes have been noted in the content and emphasis of Mathematics Education. But no matter what, the emphasis is more on the teacher component of the Mathematics instruction than on any other aspect of the program. To realize this educational goal, education institution needs to employ Mathematics teachers who possess the required professional characteristics of ideal teachers that could meet the criteria set by the Philippine Professional Standards for Teachers.

A professional Mathematics teacher is one who helps the students develop in them the love for numbers and make use of them with ease and confidence. This expectancy would require of the teacher proficiency and competence in number manipulations and problem solving. This expectancy will require him to analyze, assess, relate, and implement existing mathematics curricula and develop new ones. As such, he or she is expected to devise, plan, organize, orchestrate, and carry out mathematics teaching. This also includes creation of rich spectrum of teaching and learning situations; assessment, selection and creation of teaching materials; inspiring and motivating students; discussing curricula; and justifying teaching and learning activities with students.

Part of his competency as a mathematics teacher is personality development. Thus, he/she is expected to acquire such virtues like patience, punctuality, justice, fairness, neatness, broadmindedness as well as open-mindedness. He/She cultivates a wholesome sense of humor, always aware of the objectives of education as well as the objectives of his institution. He/She incorporates all these qualities in teaching mathematics.

Finally, a competent mathematics teacher must know how to teach. He should be a practitioner about effective teaching, just as he has a good command of the medium of instruction. He explains the

lessons well. There is no substitute to education just as there is no substitute to competent Mathematics teachers. These realizations could probably be one of the reasons why the Professional Regulation Commission requires Continuing Professional Development (CPD) units prior to the renewal of Professional License for Teachers and it is at this point that every mathematics teachers needs continuing education.

Continuing education is a more formal, episodic, and visible expression of the sustained desire for learning that provides professional life. Continuing education should not be misconstrued to be synonymous with trainings and seminars unless such undertaking is given in a series of focused lessons forming definite unified and coherent learning tasks. Thus, a three-day seminar in teaching Mathematics outside of a series cannot be classified as continuing education. It is just a seminar. On the other hand, a program that constitutes a series of lessons based on varied learning task forming a unified discipline may be called a form of continuing education.

In the field of Mathematics Education, there is no enough program on continuing education toward professionalization of Mathematics teaching. Graduate degree courses in Mathematics Science and Mathematics Education are the only ones that is commonly called continuing education program in the discipline. This apparent lack of opportunities for continuing education in mathematics has encouraged the researcher to determine the need for it to meet the education require.

2. Objectives

1) To determine the personal and professional characteristics of the teacher respondents in terms of age; sex; civil status; academic preparations; years in teaching Mathematics; number of related seminars and trainings attended for the last 3 years.

2) To appraise the teaching competence of the mathematics faculty with respect to dedication to teaching; knowledge of subject matter; classroom organization and management; instructional organization; instructional implementation; and monitoring student progress and potentials?

3) To compare the mathematics teaching competencies of faculty when they are grouped according to profile variables.

4) To know the direction on continuing education that may be pursued to enhance their mathematics teaching competencies.

3. Materials and Methods

The study used the descriptive method of research as it attempts to determine the present condition of the mathematics teaching competencies of teachers in the senior high school in the Lone Districts Province of Batangas Division of City Schools, Philippines which was used as basis for direction on continuing education for the K to 12 Curriculum that was proposed by the researcher.

A total of 62 respondents which involved the entire population participated in the study. The study used the researcher made questionnaire as the main data gathering instrument which aid to verbally interpret

the data. Dry run was conducted to determine the reliability of the items. The computed Cronbach's Alpha of .988 indicates that the items in the questionnaire are of good internal consistency and are reliable. To assess the mathematics teaching competencies, the following scale and interpretation was utilized: 5-4.50 Highly Competent, 4.49-3.50=Competent, 3.49-2.50=Moderately Competent, 2.49-1.50=Fairly Competent, and 1.49-1.00=Incompetent. The study involved two sets of respondents, the administrators and mathematics teachers.

To statistically treat the data the researcher used frequency/percentage, weighted mean, and comparison of means.

4. Results and Discussions

4.1 Personal and Professional Characteristics of the Teacher Respondents

Table 1 shows the distribution of teacher respondents in terms of age. It can be gleaned from the table that most of the respondents which consists of 20 or 48.8 percent belongs to age bracket of 29-35. It was followed by 10 or 24.4 percent that belongs to age bracket of 22-28. The next group was composed of 6 or 14.6 percent that belongs to age bracket of 36-42, there are also 4 or 9.8 percent that belongs to age bracket of 43-49 and there is only 1 or 2.4 percent that belongs to age bracket of 50 and above. It could mean that mathematics teachers in the division of city schools are relatively young; this result could probably because some of the aged teachers have already retired while others probably considered teaching abroad or considered other career for a greener pasteur.

Table 1. Distribution of the Teacher Respondents in Terms of Age

Age	Frequency	Percentage
22-28	10	24.4
29-35	20	48.8
36-42	6	14.6
43-49	4	9.8
50 and above	1	2.4
Total	41	100

Table 2 exhibits the distribution of teacher respondents in terms of sex. As based on results majority of the teacher respondents are female which consists of 26 or 53.4 percent while there are only 15 or 36.6 percent who are male. Result confirms that teaching profession is still a female dominated profession.

Table 2. Distribution of the Teacher Respondents in terms of Sex

Sex	Frequency	Percentage
Male	15	36.6
Female	26	63.4
Total	41	100

Table 3 reveals the distribution of the teacher respondents in terms of civil status. Result showed: that majority are married which consists of 27 or 65.9 percent, 13 or 31.7 percent who are single, and there is 1 or 2.4 percent who is widow. It could be gleaned from the table that majority of the teachers are married. It could probably be attributed to the fact that majority of the respondents belonged to age group of 29-35 which based on observation is the marrying age nowadays.

Table 3. Distribution of the Teacher Respondents in Terms of Civil Status

Civil Status	Frequency	Percentage
Single	13	31.7
Married	27	65.9
Widow/Widower	1	2.4
Total	41	100

Table 4 displays the distribution of the teacher respondents in terms of educational attainment. As can be gleaned from the table most of the respondents have earned their master's units as shown by 19 or 46.3 percent, there are also 15 or 36.6 percent who have earned their master's degree, but there are also 7 or 17.1 who just earned their college degree. This result is quite disappointing since nobody in the lone districts in the province of Batangas City division is at least enrolled in doctorate classes. It could be that they are busy with equally important matters. But these teachers must be aware on the need to improve their teaching qualifications. As mandated by the Philippine Regulatory Commission, every teachers must meet the requirement for continuing education to ensure teachers upgrading and continuous self-improvement which is critical to the retention and improvement of any teacher in the classroom Oluremi, (2013). This was also stipulated at the DepEd ORDER No. 42, s.2017 entitled **National Adoption and Implementation of the Philippine Professional Standards for Teachers (PPST).**

Table 4. Distribution of the Teacher Respondents in Terms of Educational Attainment

Educational Attainment	Frequency	Percentage
College Graduate	7	17.1
With Masters Unit	19	46.3
Masters Degree	15	36.6
Total	41	100

Table 5 conveys the distribution of the teacher respondents in terms of number of years in teaching.

Table 5. Distribution of the Teacher Respondents in Terms of Number of Years in Teaching

Number of Years in Teaching	Frequency	Percentage
1-3	6	14.6
4-6	8	19.5
7-9	10	24.4
10 years and above	17	41.5
Total	41	100

As can be gleaned from the table most of the respondents are teaching for 10 years and above as reflected by 17 or 41.5 percent, but it was found out that the entire 20 years were not necessarily spent teaching in the senior high. Some of them are from higher educational institutions that were displaced due to the implementation of K to 12 Curriculum. There are 10 or 24.4 percent who are already teaching for 7-9 years 8 or 19.5 percent who are teaching for 4-6 years, and 6 or 14.6 percent who are teaching for 1-3 years. These results may imply that most of the teachers are not new in the profession which could probably mean that they are enjoying what they are doing. It can also be that their decision to stay in the teaching profession can also be attributed to the new Salary Standardization Law.

Table 6 shows the distribution of the teacher respondents in terms of number of related seminars attended for the last 3 years. It was revealed that most of the teachers attended at least 6-10 seminars for the last 3 years as shown by 16 or 39.1 percent, 14 or 34.1 percent attended at least 1-5, 10 or 24.4 percent attended at least 11-15 and there is 1 or 2.4 percent who has attended 16 above related seminars for the last 3 years. Result showed that the teachers are at least exposed to seminars related to their field of specialization. This could probably be attributed to the open mindedness of the teachers and effort of the administrators of each school to provide the teachers the needed training for their personal and professional development. As stressed by Akiba and Liang (2016), teachers' continuous engagement in professional learning activities is critical for improvement of their knowledge, instruction, and student learning.

More so, professional development must first enhance teacher knowledge and skills, then create improved classroom teaching, which finally raises students achievement. Further, it must potentially serve a variety of purpose such as remediating weaknesses in the skills and knowledge of incoming teachers, keeping teachers up to date on emerging developments in the field, or addressing the needs of such specific students. Furthermore, Hightower et al. (2011) reiterated that high-quality professional development can deepen subject matter knowledge, provide enough time for teacher learning, connect existing knowledge with new knowledge, actively engage teachers, and involve teams of educators learning together.

Table 6. Distribution of the Teacher Respondents in Terms of Number of Related Seminars Attended for the Last 3 Years

Number of Seminars Attended	Frequency	Percentage
1-5	14	34.1
6-10	16	39.1
11-15	10	24.4
16 and above	1	2.4
Total	41	100

4.2 Respondents' Assessment on the Teaching Competencies of Mathematics Teachers

Table 8 presents the assessment of administrators and teachers in terms of the mathematics teaching competencies of teachers' in terms of dedication to teaching. It was revealed that the mathematics teachers demonstrated their dedication to teaching as reflected by the mean value of 4.12 and 4.14 from the administrator and teachers respectively verbally interpreted as competent. This could mean that from the point of view of the two groups of respondents they both saw the selfless characteristics of teacher to impart knowledge and efforts to walk an extra mile for the welfare of each students. According to Çağrı Tuğrul Mart (2013), one of the most important factors in the development of passion for teaching is teachers' ongoing commitment and dedication to students and learning. Passionate teachers are fiercely devoted to their work and greatly inspire their students. Further, he stressed that it is widely accepted that a distinguishing feature that teachers have is, their dedication and commitment to the development of student achievement where it was found out that there is relationship between teacher commitment and student achievement.

Table 7. **Respondents Assessment on the Teaching Competencies of Mathematics Teachers in Terms of Dedication to Teaching**

Dedication to Teaching—selfless characteristics of teacher to impart knowledge and walk an extra mile for the welfare of each student	Admin		Teachers	
	WM	VI	WM	VI
Develops one's own competency as a Mathematics teacher	4.19	C	4.19	C
Possesses a positive attitude about life and in teaching Mathematics	4.31	C	4.50	C
Spends time for community outreach	3.65	C	3.77	C
Accepts responsibility of students outcome	4.27	C	3.35	C
Seeks professional development such as in service courses, projects, and conferences in Mathematics area	4.23	C	3.96	C
Finds, implements, and shares new instructional strategies	4.19	C	4.12	C
Knows areas of personal strengths and weaknesses	4.35	C	4.35	C
Uses reflection to improve mathematics teaching and needs for development	3.85	C	4.08	C

Sets high expectations for personal classroom performance	3.96	C	3.88	C
Keeps oneself updated about new developments and trends in mathematics research practice.	4.19	C	4.23	C
COMPOSITE MEAN	**4.12**	**C**	**4.14**	**C**

Note. Legend: VC—Very Competent, C—Competent.

Table 8 exhibits the respondent's assessment on the teaching competence of Mathematics teachers in terms of knowledge of subject matter. As based on result, it was revealed that the teachers are competent as shown by the composite mean value of 4.17 and 4.08 from the administrators and teachers respectively. It could mean that these teachers are proficient in the technical competencies of teaching and they are fluent in a multilayered set of social skills that students recognize and respond to, which leads to greater learning which according to Attakorn et al. (2014), characterized finest and competent teacher. Moreover, according to Çağrı Tuğrul Mart (2013), to be a great teacher hemust be informed about new developments in his field and tries to keep abreast of them to advance his skills and knowledge base. Exhibiting enthusiasm for the subject matter that he is teaching will feed students' excitement and interest. Teacher's primary goal is to cultivate students' curiosity for efficiency in learning. One of the most significant requirement to teach effectively is good knowledge of subject matter the teacher is teaching.

Table 8. Respondents Assessment on the Teaching Competencies of Mathematics Teachers in Terms of Knowledge of Subject Matter

Knowledge of Subject Matter—teachers clear understanding of subject matter and how to impart that subject matter with students in a way that they come to own it and understand deeply	Admin		Teachers	
	WM	VI	WM	VI
Analyses, assesses, relates to, and implements existing Mathematics curricula and syllabi and construct new ones	4.15	C	4.27	C
Masters Mathematics modes of thought	4.15	C	4.19	C
Communicates within and about Mathematics	4.19	C	4.15	C
Detects, formulates, delimitates and specifies Mathematical problems, pure or applied	4.19	C	3.92	C
Integrates topics discussed in the lesson and relates them to concepts previously learned by the students in the same course	4.19	C	4.12	C
Analyzes and builds Mathematical modes and utilizes different kinds of representations of Mathematical entities	4.19	C	3.88	C
Relates the subject matter to other pertinent topics	4.23	C	4.19	C
Raises problems and issues relevant to the topic(s) of discussion	4.27	C	4.08	C

Is able to handle symbol language and formal Mathematical system	3.96	C	3.96	C
Balances variety and challenge in students activities	4.12	C	4.04	C
COMPOSITE MEAN	**4.17**	**C**	**4.08**	C

Note. Legend: C—Competent.

Table 9 shows the respondents assessment on the teaching competence of mathematics teachers in terms of classroom organization and management. It could be gleaned from the table that the mathematics teachers are competent as shown by the same composite mean value of 4.20 This result was validated by the administrators in terms of teachers' ability to handle routine tasks promptly.

Table 9. Respondents Assessment on the Teaching Competencies of Mathematics Teachers in Terms of Classroom Organization and Management

Classroom Organization and Management—teachers' ability to organize and manage the classroom in accordance with the goals and objectives of specific learning institutions	Admin		Teachers	
	WM	VI	WM	VI
Orchestrates smooth transitions and continuity of classroom momentum	4.08	C	4.04	C
Organizes multi-task properly	4.23	C	3.96	C
Is aware of all the activities in the classroom	4.08	C	4.35	C
Anticipates potential problems	4.15	C	4.12	C
Uses space, proximity, or movements around the classroom for nearness to spot trouble and to encourage attention	4.23	C	4.27	C
Handles routine tasks promptly, efficiently, and consistently	4.38	C	4.23	C
Organizes classroom space efficiently	4.19	C	4.15	C
Interprets and responds to inappropriate behavior promptly	4.15	C	4.19	C
Implements rules of behavior fairly and consistently	4.19	C	4.27	C
Uses appropriate disciplinary measures	4.27	C	4.42	C
COMPOSITE MEAN	**4.20**	**C**	**4.20**	C

Note. Legend: C—Competent.

Efficiently, and consistently and their ability to organize classroom space efficiently. It could mean that from the point of view of the administrators the mathematics teachers were able to manifest what Parsonson (2012), claims about competent teachers who reiterated that bringing experienced teachers into the classroom to assist in the development of classroom management skills through goal-setting, feedback and praise also has been shown to be effective in enhancing teaching skills and in improving student academic performance.

Table 10 shows the respondents assessment on the teaching competence of mathematics teachers in terms of instructional organization. Results revealed that the mathematics teachers are competent as revealed by the mean value of 4.17 and 4.18 verbally interpreted as competent from the administrators and mathematics teachers respectively. It could mean that from the administrators' point of view they found the Mathematics teachers to be competent since they are very able to plan and design instruction. According to Knight (2012), instruction that is well planned moves students from their current level of competency toward explicit criteria for success. It could mean that from the two groups of respondent they found the mathematics teachers to be able to implement quality instructions. Also, Kaplan and Owings (2001), believed that quality teachers possess content knowledge and have studied instructional ideas and practices that have increased students achievement.

Table 10. Respondents Assessment on the Teaching Competencies of Mathematics Teachers in Terms of Instructional Organization

Instructional Organization—complex activity that involves careful preparations and planning of teaching objectives and activities	Admin		Teachers	
	WM	VI	WM	VI
Focuses classroom time on teaching and learning	4.31	C	4.35	C
Links instruction to real-life situations of the students	4.12	C	4.23	C
Devises, plans, organizes, orchestrates and carries out Mathematics teaching	4.04	C	4.12	C
Makes use of aids and tools and relates these to Mathematics	4.12	C	4.04	C
Maintains momentum within and across lesson	4.15	C	4.12	C
Orients the classroom experience toward improvement and growth	4.27	C	4.23	C
Carefully links learning objectives and activities	4.31	C	4.27	C
Organizes content for effective presentation	4.23	C	4.12	C
Considers student's attention span and learning styles when designing lesson	4.12	C	4.23	C
Develops objectives, questions, and activities that reflect the higher and lower level of cognitive skills appropriate for the content needed by the students on a regular basis.	4.08	C	4.12	C
COMPOSITE MEAN	**4.17**	**C**	**4.18**	C

Note. Legend: C—Competent.

Table 11 illustrates the respondents' assessment on the teaching competence of mathematics teachers in terms of instructional implementation. Results revealed that the mathematics teachers are competent as revealed by the composite mean value of 4.18 and 4.15 verbally interpreted as competent from the administrators and mathematics teachers respectively. It could mean that from the two groups of

respondent they found the mathematics teachers to be able to implement quality instructions. According to Kaplan and Owings (2001), they believed that quality teachers possess content knowledge and have studied instructional ideas and practices that have increased students achievement.

Table 11. Respondents Assessment on the Teaching Competencies of Mathematics Teachers in Terms of Instructional Implementation

Instructional Implementation—teachers ability to take responsibility in teaching and to make sure that the students learn	Admin		Teachers	
	WM	VI	WM	VI
Employs different techniques and instructional strategies, such as hands-on-learning	4.31	C	4.42	C
Handles different representations of Mathematical entities	4.04	C	4.04	C
Stresses meaningful conceptualization, emphasizing the student's own knowledge of the world and his learning environment	3.96	C	3.88	C
Stresses students responsibility and accountability	4.19	C	4.15	C
Teaches meta cognitive strategies to support reflection on learning process	4.08	C	4.04	C
Emphasizes higher order thinking skills in mathematics	4.19	C	4.31	C
Varies question type to maintain interest and momentum	4.19	C	4.19	C
Is able to reason out Mathematically	4.27	C	4.19	C
Varies instructional strategies, types of assignments, and activities	4.23	C	4.12	C
Leads, directs, and paces student activities	4.31	C	4.15	C
COMPOSITE MEAN	**4.18**	**C**	**4.15**	C

Note. Legend: 3.50-4.50, C—Competent.

Table 12 shows the respondents assessment on the teaching competence of mathematics teachers in terms of monitoring student progress and potential. Results revealed that the mathematics teachers are competent as revealed by the composite mean value of 4.22 and 4.37 verbally interpreted as competent from the administrators and mathematics teachers respectively. This result could probably be attributed to the teachers' ability to provide meaningful and related homeworks to their students, discuss how they grade their assignment, and give meaningful comments if necessary.

Table 12. Respondents Assessment on the Teaching Competencies of Mathematics Teachers in Terms of Monitoring Student Progress and Potential

Monitoring Student Progress and Potential—teachers ability to monitor student learning as feedback for them about what strategies are working, which students need more targeted assistance, and what content needs to be revisited	Admin		Teachers	
	WM	VI	WM	VI
Clearly explains homework	4.35	C	4.42	C
Relates homework to the content under study and to student capacity	4.27	C	4.38	C
Identifies, assess, and characterizes student learning outcomes and competencies	4.08	C	4.31	C
Discusses grades, comments and homework in class	4.46	C	4.65	C
Thinks possible misconceptions that may occur during instruction and correct students on these misconception	4.15	C	4.35	C
Gives clear, specific and timely feedback	4.23	C	4.35	C
Re-teaches students who did not achieve mastery and offers tutoring to students who seek additional help	3.92	C	4.15	C
Uncovers, interprets and analyzes students learning of Mathematics as well as their notions, beliefs and attitudes towards Mathematics	4.08	C	4.04	C
Monitors and assess students' progress	4.29	C	4.50	C
Knows and understand students as individuals in terms of ability, achievement, learning styles and needs.	4.38	C	4.50	C
COMPOSITE MEAN	**4.22**	**C**	**4.37**	C

Note. Legend: 3.50-4.50, C—Competent.

It could mean that the teachers adhere to the objective of AIR (2016) about competent teachers. They believe that competent teachers help learners to achieve their goals. Teachers must also discover how to navigate the demands of the classroom teachers since it is a fact that even those teachers who have had the benefit of strong teacher preparation may face a number of challenges for which they may not feel adequately prepared.

In summary, competent teachers are those who can conduct their lessons very well and manage their classes effectively. They derive competence from both their years of experience as well as continuous professional development efforts. They are focus on student success and maintain focus on teaching and learning and they are learning-oriented. They demonstrate sensitivity towards the personal needs of fellow teachers. And they help and support colleagues in terms of their professional development and improvement of classroom practice.

4.3 Comparison of Teaching Competencies When the Mathematics Teachers Are Grouped according to Profile Variables

Table 13 reveals the comparison of teaching competencies when the mathematics teachers are grouped according to age. Generally, the table revealed that in terms of age (4.37), sex (4.39), educational attainment (4.35), years in teaching (4.42), and number of related seminars attended (4.35) the teachers are more competent in terms of monitoring student progress and potentials. It could mean that the teachers have the ability to properly monitor how their students are making progress on their day to day lessons and classroom activities thereby giving them the chance to identify the student's potential which in turn may help the students unfold their potential. It could be that they know and understand students as individuals in terms of ability, achievement, learning styles and needs. On this note, they can use these information to re-teach students who did not achieve mastery which also enables them to offer tutoring to students who seek additional help. This results could probably be attributed to the government policy of no students will be left behind. It could mean that the teachers adhere to the objective of AIR (2016) about competent teachers. They believe that competent teachers help learners to achieve their goals. Teachers must also discover how to navigate the demands of the classroom teachers since it is a fact that even those teachers who have had the benefit of strong teacher preparation may face a number of challenges for which they may not feel adequately prepared. In doing so, teachers must be keen and conscientious to monitor how their students are making progress which they can use as baseline information on how they can help their students to perform better.

Table 13. Comparison of Teaching Competencies When the Mathematics Teachers Are Grouped according to Profile Variables

Profile	DT	KSM	COM	IO	II	MSPP
Age	4.14	4.08	4.20	4.18	4.15	4.37
Sex	4.16	4.11	4.19	4.20	4.19	4.39
Civil Status	4.02	3.95	4.22	3.92	3.93	4.18
Educational Attainment	4.06	4.03	4.11	4.15	4.16	4.35
Years in Teaching	4.25	4.18	4.30	4.26	4.26	4.42
Number of Seminars Attended	4.17	4.07	4.21	4.14	4.11	4.35

On the other hand, it was also revealed from the table that the mathematics teachers are less competent on their knowledge of the subject matter in terms of age (4.08), sex (4.11), educational attainment (4.03) years in teaching (4.18), and number of related seminars attended (4.07) which should not be the case. This result could probably be attributed to the fact that there are senior high school in teachers in the division of Batangas that teaches mathematics subjects who are non-mathematics graduate. But whatever it is, regardless of age, sex, years in teaching, number of related seminars attended, and education preparation, mathematics teachers must have the capacity to efficiently and effectively

deliver instruction. This result is quite alarming because more than anybody else, the teacher must be the most knowledgeable creature inside the classroom. As reiterated by Parsonson (2012), teachers have been found to be the single most important factor influencing student achievements, therefore, teachers must have the capacity and the ability to teach along this line, enrolment in graduate programs and attendance to related seminars and training is highly recommended. As stressed by Akiba and Liang (2016), teachers' continuous engagement in professional learning activities is critical for improvement of their knowledge, instruction, and student learning. Furthermore, Hightower et al. (2011) reiterated that high-quality professional development can deepen subject matter knowledge, provide enough time for teacher learning, connect existing knowledge with new knowledge, actively engage teachers, and involve teams of educators learning together.

4.4 Direction on Continuing Education That May Be Pursued by the Mathematics Teachers

Based on the result of the study the following strategies/activities which will served as direction for the continuing education that could be pursued by the mathematics teachers were proposed.

- Seminar on Teacher's Technological Pedagogical Content Knowledge
- Enrolment in Graduate School Programs That Dealt with Mathematics Teaching and/or Mathematics Education
- Attendance to Seminars and Conferences, and Workshops Related to Innovative Teaching for Effective Mathematics Teaching and/or Mathematics Education
- Expose Mathematics Teachers in the World of Research

5. Conclusions and Recommendations

Majority of the mathematics teachers were female and married while most of them were in the age bracket of 29-35, have master's unit, teaching for 10 years and above and have attended at least 6-10 related seminars for the last 3 years. The mathematics teachers in the senior high school in the division of city schools in the Province of Batangas were competent in the six areas of identified teaching competencies such as dedication to teaching, knowledge of subject matter, classroom organization and management, instructional organization, instructional implementation, and monitoring student progress and potential as assessed by the administrators and teachers.

Generally, mathematics teachers are more competent in monitoring student progress and potential when they are grouped according to age, sex, educational attainment, years in teaching, related seminars attended for the last 3 years, but less competent in terms of knowledge of subject matter.

The proposed directions on continuing education that could be pursued by the mathematics teachers are believed to respond in K to 12 Curriculum.

Finally, since mathematics teachers were found to be competent in terms of monitoring student progress and potential they must capitalize on this aspect to ensure that no students will be left behind. On the other hand, teachers must put extra efforts on how to properly address issues about knowledge of subject matter where they found to be less competent.

It is recommended that the directions on continuing education proposed by the researcher be reviewed and be considered for implementation.

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