

Levels of Professional Competencies of Proficient and Highly Proficient Teachers Based on the Philippine Professional Standards (PPST): Basis for In-Service Training

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Abstract: This study aims to investigate the level of professional competencies of proficient and highly proficient secondary Mathematics teachers along with the seven domains of the Philippine Professional Standards for Teachers (PPST) which can be used as basis for in-service training in the schools' division of Bulacan. The descriptive method was employed in the study. Essentially, a survey questionnaire was used as a primary data-gathering tool. The main instrument is a survey questionnaire adopted from the Philippine Professional Standards for Teachers (PPST) per DepEd Order No. 42. s. 2017. The total population of math teachers from nine (9) identified big schools in the Schools Division of Bulacan is 192 consisting of 165 proficient and 27 highly proficient teachers. Using the equation developed by Cochran the sample was computed for this study. Statistical analysis was used to determine the level of competencies of proficient and highly proficient Mathematics teachers. This will be treated using t-test and probability value and analysis of variance or ANOVA. It is shown that 82.14% of the total respondents are proficient teachers which is equivalent to 115. The remaining 17.86% of the total respondents are highly proficient teachers. Most of the teachers are teaching Mathematics for more than 10 years which is found to be 40.9% of their total number and equivalent to 47. Teachers who are teaching for 4-10 years are 36.5% that is equivalent to 42 while 22.6% of the teachers which is equivalent to 26 are found to be teaching for 0-3 years. Proficient and Highly proficient teachers assessed their competency level as moderately competent. All five indicators are at the level of integrating in terms of Observation Rating of Proficient and Highly Proficient Teachers. There is no significant difference on the level of competencies of proficient teachers under the domains Content Knowledge and Pedagogy, Learning Environment, Diversity of Learners, Curriculum and Planning, and Community Linkages and Professional Engagement when grouped according to their demographic profile. There is A significant difference in the observation rating of proficient and highly proficient teachers. This implies that the observation rating on proficient teachers is somehow different on the observation rating of the highly proficient teachers.

Keywords— Philippine Professional Standards for Teachers, competencies, proficient, highly proficient

1. INTRODUCTION

The Philippine educational system has a higher population nowadays particularly in the secondary level where Junior and Senior High Schools are now implemented as integrated which means a bigger slice of the budget from the government in the 2016 General Appropriation Act (Department of Budget and Management). Ceaseless efforts are now given and expected from to the school administrators and teachers on how to come up with the escalating number of enrollees and the suitable performance and competence. Schools, especially in the far-flung areas need to put in consideration the preparations of the school whether it is tangible or intangible to accommodate the needs of the learners [1][2].

2. RELATED WORKS

Teachers are also challenged to upgrade their competencies to cope with these difficulties to provide quality education [3]. Filipino teachers have a deep regard for education as the basic and primary avenue for upward social and economic mobility[4]. That is why teachers bestow numerous ways in implementing and in using teaching strategies and methodologies to promote the

academic performance of the students in all learning disciplines specifically in the Mathematics subject. One of the focal issues that needs to be addressed is how the teachers' competence suits to the actual necessities of the 21st century learners [5]

Indeed, effective classroom teachers never stop exploring innumerable ways of improving students' outcomes, predominantly in Mathematics which is considered by almost all students as a challenging subject. The K-12 Curriculum has recognized the importance of Mathematics in the day-by-day activities which is the focal rudiment for international connections and numerical literacy [6]. Furthermore, to stay aligned with the educational standards, teachers' competencies must be observed and evaluated to determine their level of performance in order to find out if this really has a connection to students' academic needs. Thus, changes in society and in the world of work and growing skills needs, combined with reforms of education policy and structural development, increase challenges for Mathematics competence of teachers [7].

Today, Mathematics occupies a major and leading role in the educational system. Consequently, according to DepEd Secretary Luistro, restructuring of the classroom

assessment specifically in this line of expertise in the K-12 program/curriculum became essential to meet the needs of the times and to ultimately contribute to the attainment of the national government goals. The innovative Mathematics program for this matter provides learning experiences that demand student-learners to develop habits of inquest and continuing desire to pursue knowledge. It also stresses most up-to-date problem solving, and higher order thinking skills [8].

Despite the usual flow of the teaching learning process as manifestation of teachers' competence, students' outcomes and performances are still rundown. Teachers are noted of having monotonous traditional approaches instead of creating a more positive view of Mathematics in students' minds. With this, high school students gain low achievement when they take the assessments which are the main bases of school performance [9]. Students with poor Mathematics competencies take disadvantageous responses to the actual classroom setting and poor realizations [10].

3. STATEMENT OF THE PROBLEM

This study aims to investigate the level of professional competencies of proficient and highly proficient secondary Mathematics teachers along the seven domains of the Philippine Professional Standards for Teachers (PPST) which can be used as basis for in-service training in the schools' division of Bulacan.

Specifically, it answers the following questions:

1. What is the profile of the proficient and highly proficient secondary Mathematics teachers in terms of the following variables:
 - i. age;
 - ii. sex;
 - iii. employment status;
 - iv. position;
 - v. total number of years in teaching Mathematics;
 - vi. grade level taught; and,
 - vii. highest degree obtained?
2. What is the level of professional competencies of proficient and highly proficient secondary Mathematics teachers along the following PPST standards:
 - i. Content Knowledge and Pedagogy;
 - ii. Learning Environment;
 - iii. Diversity of Learners;
 - iv. Curriculum and Planning;
 - v. Assessment and Reporting;
 - vi. Community Linkages and Professional Engagement;and,
 - vii. Personal Growth and Professional Development?
3. What is the observation rating of Proficient Teachers based on class observation tool?
4. What is the observation rating of Highly Proficient Teachers based on class observation tool?

5. Is there a significant difference in the level of professional competencies of proficient and highly proficient Mathematics teachers when they are grouped according to demographic profile such as age, sex, employment status, position, total number of years in teaching Mathematics, grade level taught, and highest degree obtained?
6. Is there a significant difference in the observation rating of Proficient and Highly Proficient Teachers?
7. What in-service training program can be crafted based on the results of the study?

4. METHODOLOGY

The descriptive method was employed in the study. It is conducted simply to describe individual variables as they exist naturally (Gravetter, 2009). It involves the description, recording, analysis, and interpretation of the present nature, composition, or process or phenomena.

Essentially, a survey questionnaire was used as primary data-gathering tool. Documentary analysis was also employed as a secondary source and used to help the researcher in obtaining, analyzing the statistics to be used in the study and in gathering data.

The total population of math teachers from nine (9) identified big schools in the Schools Division of Bulacan is 192 consisting of 165 proficient and 27 highly proficient teachers. Using the equation developed by Cochran the sample was computed for this study.

5. RESULTS AND DISCUSSIONS

Demographic Profile of Proficient Teachers

It is shown that 82.14% of the total respondents are proficient teachers which is equivalent to 115. The remaining 17.86% of the total respondents are highly proficient teachers. Most of the respondents are 26-30 years old of age which is 25.2% of their total equivalent to 29 and 23 are 36-40 years' old which is 20% of their total number. 15.7% which is equivalent to 18 are aged 31-35% while 13.9% that is equivalent to 16 are aged 46-50 years old. There are 11.3% of the proficient teachers that are aged under 25 years' old that is equivalent to 13 and those who are aged 51-55 years old same with those who are aged 55 above are both 6.1% of their total number that is equivalent to 7. Only 2 of them are aged 41-45 years' old which is 1.7% of their number.

Most of the proficient teachers are females that is 80% equivalent to 92 from their total number. Proficient teachers who are male then are only 23 from their total which is equivalent to only 20% compared to the number of female proficient teachers. Almost all of the proficient teachers are permanent which is at 93% of their total equivalent to 107 while there are 8 of them which is equivalent to 7% are regular. None of the proficient teachers are either substitute, provisional or contractual.

Respondents with 57.4% are Teacher I that is equivalent to 66, while 27.8% of them are Teacher III which is equivalent to 32. The remaining 14.8% of their number that is equivalent to 17 are found to be Teacher II. This tells that most of the proficient teachers are Teacher I. Most of the teachers are teaching Mathematics for more than 10 years which is found to be 40.9% of their total number and equivalent to 47. Teachers who are teaching for 4-10 years are 36.5% that is equivalent to 42 while 22.6% of the teachers which is equivalent to 26 are found to be teaching for 0-3 years. Results also shows that 27.8% of the teachers are teaching Grade 9 that is equivalent to 32 while teachers who taught Grade 7 and Grade 8 are the same with 26.1% of their total number which is equivalent to 30. Teachers who are teaching Grade 10 are 19.1% that is equivalent to 22 and only 1 teacher teaches at Senior High School (SHS) that is only 0.9% of their total number. None of the teachers have a Doctorate degree. Teachers with MA units are 65.2% which is equivalent to 75 of them, 22.6% of them equivalent to 26 are Bachelor's degree and 11.3% of them that is equivalent to 13 have Master's degree. There is only one teacher who has Doctorate units which is only 0.9% of their total number.

Demographic Profile of Highly Proficient Teachers

The respondents are 51-55 years' old which is 36% from the total sample equivalent to 9, 28% are 46-50 years old equivalent to 7, 24% are 36-40 years old equivalent to 6, 8% are 31-35 years old equivalent to 2 and only 4% is aged over 55 years' old which is equivalent to 1. None of the teachers are aged under 25 years old or either 26-30 years old and 41-45 years old. Most of the highly proficient teachers are female that is 68% equivalent to 17 from their total number. Highly proficient teachers then who are male are 32% equivalent to 8 from their total number.

Almost all of the highly proficient teachers are permanent which is at 88% of their total equivalent to 22 while there are 3 of them which is equivalent to 12% are regular. None of the highly proficient teachers are either substitute, provisional or contractual. There are 84% of the respondents which are Teacher I that is equivalent to 21, while 16% of them are Teacher II which is equivalent to 4. None of the highly proficient teachers has a position of Teacher III. Most of the teachers are teaching mathematics for more than 10 years which is found to be 80% of their total number and equivalent to 20. Teachers who are teaching for 4-10 years are 12% that is equivalent to 3 while 8% of the teachers which is equivalent to 2 are found to be teaching for 0-3 years.

About 52% of the teachers are teaching Grade 10 that is equivalent to 13 from their total while teachers who taught Grade 9 are 16% equivalent to 4. Teachers teaching Grade 7 and Grade 8 are the same with has 12% of their total number which is equivalent to 3. Teachers who are teaching Senior High School are 8% that is equivalent to 2 from their total number. Teacher-respondents have MA units which are equivalent to 13 and 52% from their total. Teachers having Doctorate Degree are 20% which is equivalent to 5 of them,

16% of them equivalent to 4 are Master's degree and 12% of them that is equivalent to 3 have Doctorate units.

The overall weighted mean in domain 1 is 4.24 and interpreted as Moderately Competent. This implies that the teachers assessed themselves along the domain Content Knowledge and Pedagogy as Moderately Competent. The overall weighted mean of the domain learning and environment is 4.42 which is verbally interpreted as Moderately Competent. This says that the teacher's assessment on themselves under this domain is moderate level of competency. Domain 3 along Diversity of learners leads to an overall weighted mean of 4.06 which also implies an assessment of Moderately Competent. The overall weighted mean of this domain 4 – Curriculum and Planning is 4.28 and verbally interpreted as Moderately Competent. This tells that the teacher's level of professional competency along curriculum and planning at moderate level.

The weighted mean under domain 5 is 4.42 implies that the teachers assessed their professional competency on assessment and reporting at a moderate level.

Domain 6 Community Linkages and Professional Engagement leads to an overall weighted mean of 4.32 that is verbally interpreted as Moderately Competent. This means that the teachers assessed themselves under this domain as Moderately Competent. The weighted mean under this domain is 4.35 which tells that the teachers assessed their professional competency on personal growth and professional development at a moderate level.

Highly Proficient Teachers Level of Professional Competency

The overall weighted mean of the domain 1 is 4.31 which is verbally interpreted as Moderately Competent. This tells that the teachers assessed their level of competency under content knowledge and pedagogy as moderate. The overall weighted mean of domain 2 is 4.39 and verbally interpreted as Moderately Competent. This tells that the teacher's level of professional competency along learning and environment at moderate level. All of the statements under domain 3 are verbally interpreted as Moderately Competent. The overall weighted mean is shown to be 4.18 also interpreted as Moderately Competent. This further explains that the teachers assessed their professional level of competency along diversity of learners as moderate.

The teachers assessed themselves on domain 4 as Moderately Competent. This leads to an overall weighted mean of 4.19 which also implies an assessment of Moderately Competent along curriculum and planning. The overall weighted mean of this domain 5 is found to be 4.25 which state that the teachers assessed their level of professional competency along assessment and reporting as Moderately Competent.

Domain 6 leads to an overall weighted mean of 4.24 that is verbally interpreted as Moderately Competent. This means

that the teachers assessed themselves along community linkages and professional engagement as Moderately Competent. On overall, the weighted mean under this domain 7 is 4.47 which tell that the teachers assessed their professional competency on personal growth and professional development at a moderate level.

Observation Rating of Proficient Teachers

The overall observation rating of the proficient teachers is at the level of consolidating with an overall weighted mean of 6.08. Indicators “Apply knowledge of content within and across curriculum content teaching areas” with weighted mean 6.23, “Apply a range of teaching strategies to develop critical and creative thinking, as well as other higher-order thinking skills” with weighted mean 5.92, “Manage classroom structure to engage learners, individually or in groups, in meaningful exploration, discovery, and hands -on activities within a range of physical learning environments” with weighted mean 5.88, indicators “Manage learner behavior constructively by applying positive and non-violent discipline to ensure learning-focused environments” with weighted mean 5.69, “Use differentiated, developmentally appropriate learning expressions to address learners gender, needs, strengths, interests, and experiences” with weighted mean 6.10, “Plan, manage and implement developmentally sequenced teaching and learning processes to meet curriculum requirements and varied teaching contents” with weighted mean 6.18, and indicator “Design, select, organize and use diagnostic, formative and summative assessment strategies consistent with curriculum requirements” with weighted mean 6.47 are all at level of consolidating. On the other hand, indicator “Use a range of teaching strategies that enhance learner achievement in literacy and numeracy skills” with weighted mean 5.46 is at the level of applying while indicator “Select, develop, organize and use appropriate teaching and learning resources, including ICT, to address learning goals” with weighted mean 6.82 is at the level of integrating.

Observation Rating of Highly Proficient Teachers

The overall observation rating of highly proficient teachers is at the level of integrating with an overall weighted mean of 7.04. All five indicators are at the level of integrating as shown in the table. Indicators “Apply knowledge and content within and across curriculum content teaching areas” with weighted mean 6.80, “Apply a range of teaching strategies to develop critical and creative thinking, as well as other higher-order thinking skills” with weighted mean 6.96, “Manage classroom structure to engage learners, individually or in groups, in meaningful exploration, discovery, and hands -on activities within a range of physical learning environments” with weighted mean 7.04, indicator “Manage learner behavior constructively by applying positive and non-violent discipline to ensure learning-focused environments” with weighted mean 7.16 and “Plan, manage and implement developmentally sequenced teaching and learning processes to meet curriculum requirements and varied teaching contents” with weighted 7.24.

Significant Differences on the Level of Competencies of Proficient Teachers and Highly Proficient Teachers as to their Demographic Profiles

There is no significant difference on the level of competencies of proficient teachers under the domains Content Knowledge and Pedagogy, Learning Environment, Diversity of Learners, Curriculum and Planning, and Community Linkages and Professional Engagement when grouped according to age. The mentioned domains have computed p-values that were greater than the level of significance used in the test which is 0.05. This implies on failing to reject the hypotheses because based on the decision rule, we Reject the Hypotheses if p-value is less than or equal to 0.05 otherwise, we Failed to Reject. On the other hand, domains Assessment and Reporting, and Personal Growth and Professional Development are found to have significant difference when the age-group of proficient teachers are considered. This is because they have computed p-value that is less than 0.05. While on highly proficient teachers, it is found out that there are no significant differences on their level of competencies under all the domains considering their age groups.

There is no significant difference on all the seven domains when the proficient teachers are grouped according to sex. This is the same with highly proficient teachers which is also found that their level of professional competencies has no significant difference along the seven domains considering their sex. It is found that the computed p-value of all the seven domains were greater than 0.05 which leads on failing to reject the hypotheses. No significant difference when proficient teachers were grouped according to employment status. It is evident to the computed p-value of the domains shown from the table which is greater than 0.05. This leads on the decision of Failing to Reject H_0 . This means that the level of professional competencies of proficient teachers is the same whether what their employment status is. As for highly proficient teachers, four domains are found to have no significant differences when grouped according to employment status.

As for highly proficient teachers, domains Content Knowledge and Pedagogy, Learning Environment, Diversity of Learners, Assessment and Reporting and Community Linkages and Professional Engagement are not significantly different considering the position with p-value greater than 0.05 failing to reject the hypotheses, while domains Curriculum and Planning and Personal Growth and Professional Development are found to be significant with p-values less than 0.05 which rejects the hypotheses.

There is no significant difference in domains Content Knowledge and Pedagogy, Learning Environment, Diversity of Learners, Assessment and Reporting, Community Linkages and Professional Engagement, and Personal Growth and Professional Development when the total number of years in teaching Mathematics by the proficient teachers is considered. The computed p-value of the mentioned domains is found greater than 0.05 which makes the decision on failing to reject

the hypotheses of the study. Only the domain Curriculum and Planning is found to have significant difference with a p-value that is less than 0.05. On the other hand, results from the table above shows that there is no significant difference in all the domains when highly proficient teachers were grouped according total number of years in teaching Mathematics, since their p-values are all greater than 0.05 that leads on failing to reject the hypotheses.

All of the domains are found to be not significantly different whether what grade level were the proficient teachers have taught. This is evident with their computed p-value that is all greater than 0.05 which falls on failing to reject the hypotheses based on the decision rule mentioned. This tells that the level of professional competency of the teachers is not the same whether what grade level they taught. This is opposite on highly proficient teachers which is shown that all of the domains are found to be significantly different considering different grade levels that the highly proficient teachers taught, showing p-values less than 0.05 which leads on a decision of rejecting the hypotheses.

There is no significant difference on all the seven domains when the proficient teachers are grouped according to their highest degree obtained. This is the same result as for the highly proficient teachers' level of professional competencies. The computed p-value of the domains is greater than 0.05 which according to the decision rule we failed to reject the hypotheses. This somehow tells that highest degree of the teachers does not cause difference on their level of professional competency somehow.

Significant Difference in the Observation Rating of Proficient and Highly Proficient Teachers

Results show a computed p-value of 0.000 which is less than the 0.05 level of significance used in the test. According to the decision rule mentioned in the previous tests, we reject the hypothesis which tells that there is significant difference in the observation rating of proficient and highly proficient teachers. This implies that the observation rating on proficient teachers is somehow different on the observation rating of the highly proficient teachers.

6. CONCLUSIONS

Based on the aforementioned findings, the following conclusions were drawn:

- i. Majority of the Proficient Teachers are female, ages 26-20, with a permanent status, teaching mathematics for more than 10 years and with MA units. However, Highly Proficient Teachers are females, ages 51-55, with permanent status, teaching mathematics for more than 10 years and, with MA units.
- ii. Proficient Teachers assessed themselves along the seven domains of PPST as moderately competent.

- iii. Highly Proficient Teachers assessed themselves along the seven domains of PPST as moderately competent.

- iv. The overall rating of the proficient teachers tells that they use well-connected pedagogical aspects of the indicator consistently aligned with student development that supports students to be successful learners.

- v. The overall rating of the highly proficient teachers tells that they use well-connected pedagogical aspects of the indicator to create an environment that addresses individual and group learning goals.

- vi. There is no significant difference on the level of competencies of proficient teachers under the domains Content Knowledge and Pedagogy, Learning Environment, Diversity of Learners, Curriculum and Planning, and Community Linkages and Professional Engagement when grouped according to age, sex, employment status, position, number of years in teaching math, grade level taught, and highest degree obtained.

- vii. There are no significant differences on the level of competencies of highly proficient teachers under all the domains which are Content Knowledge and Pedagogy, Learning Environment, Diversity of Learners, Curriculum and Planning, Assessment and Reporting, Community Linkages and Professional Engagement and Personal Growth and Professional Development when grouped according to age, sex, employment status, position, number of years in teaching math, grade level taught, and highest degree obtained.

7. RECOMMENDATIONS

In the light of the foregoing findings of this study and drawn conclusions, the researcher offers the following recommendations:

- i. More trainings and seminars on competency-based mathematics should be delivered to the proficient and highly proficient teachers.
- ii. The PPST tool should be discussed among mathematics teachers for further training to the tasks to be assigned to them and also the content of the PPST tool.
- iii. Since the level of competency of Mathematics teachers is moderately competent, they should improve the competencies and work performance through personal and professional development. Professional development activities may be an independent study or the professional developments are those of the formal programs.
- iv. The proposed Program Development or in-service training is an output of this study that should be further reviewed and examined for immediate implementation.
- v. Finally, it is recommended that another study be undertaken in order to further investigate the factors that

render the level of professional competencies of proficient and highly proficient mathematics teachers.

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