Predictors of beginning teachers' teaching performance

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Introduction: Quality education hinges on teacher quality. The multifaceted nature of teachers' roles and their teaching performance necessitates a comprehensive exploration of factors influencing overall education quality.

Methods: This study employed a regression research design, utilizing an expert-validated survey questionnaire completed by 2,680 beginning teachers from the Department of Education across 16 regions in the Philippines. The study aimed to identify personal, educational, and professional characteristics that predict teaching performance as measured by the Results-based Performance Management System (RPMS).

Results: The analysis revealed that among various characteristics, socioeconomic status (personal), grade point average (educational), and both the grade level taught and length of service (professional) were significant predictors of teaching performance.

Discussion: The findings underscore the need for teacher education institutions to adapt curricular delivery in a manner that reflects the practical realities of teaching and acknowledges situated learning. Recommendations include the development of quality assurance mechanisms, academic coaching and mentoring programs, and initiatives to strengthen financial literacy among pre-service teachers to enhance their future teaching performance.

KEYWORDS

beginning teachers, performance predictors, teacher characteristics, teacher education institutions, teacher education curriculum

1 Introduction

Quality education is contingent upon teacher quality and quality-assured teaching performance. Over the years, several studies on teacher quality were conducted (Rodríguez and Rubio, 2016; Goldhaber, 2016; Green et al., 2018) supporting the tenet that teacher characteristics are linked with teacher performance. Before teacher induction for inexperienced or beginning teachers to meet the performance standards, credentialing requirements (e.g., pedagogic and subject content credentials) were determined as stipulated in the hiring guidelines. Unlike other countries such as Singapore where a single institution provides teacher training, the Philippines has over 1,000 higher education institutions offering teacher education programs. With the varying accreditation levels, the Department of Education (DepEd), as end-users of teacher education program graduates, pointed out a seeming disconnect in producing teachers who are classroom-ready (Briones as cited in Malipot, 2020). Several fora and partnerships forged between DepEd and teacher education institutions (TEI) were initiated to address the needed personal and professional competence necessary to provide quality 21st-century education.

In the Philippines, the professional standards for teachers, released in 2017 through DepEd Memo no. 42, served as a yardstick for teacher quality expressed in terms of the seven domains that characterize professional competence stipulated in the Philippine Professional Standards

for Teachers (PPST). However, despite the claims of incorporating the standards into teacher training and certification programs that support the basis for teacher evaluation, there are identified education gaps. These include teacher education curriculum (Briones, 2020), teacher quality (Ingersoll, 2007; Hollins, 2011), and even access to ICT (Czerniewicz and Brown, 2005) which are vital in the learning and development of the students. School staffing with teachers who have quality training and who have lived up to professional standards is vital to the actualization of the desired student performance within and beyond the classroom. Nguyen To Nhu et al. (2016) identified professional environment and the adequacy of teacher training as a factor contributing to teachers' professional competence while Gimbert et al. (2007) and Beck et al. (2007) considered exposure to opportunities as an offshoot of socio-economic status expressed in terms of salary/wages. Other school contextual factors such as aptitude and work experiences also serve as contributing to teachers' performance (Boyd et al., 2011) with field experience as one of the most important components (Rice, 2003).

All these aforementioned factors received considerable attention in the past years. With the increasing demands to produce future-ready and contributing members of the society needed for national development, it is imperative to consider aspects that impact the beginning teachers' performance. On this premise, the beginning teachers' characteristics will be explored to determine how these have influenced their teaching performance as reflected in their Results-Based Performance Management System (RPMS). It is hoped that the exploration of teachers' characteristics will inform policies and translate policy recommendations on the enhancement of teacher education curriculum and instruction. The policies to be advanced will reflect the reality of teaching as a complex activity and the recognition of situated learning toward regulating teacher requirements, harmonizing indicators of teacher quality, and crafting career stage-specific professional development programs.

1.1 Statement of the problem

This study explores the factors that affect beginning teachers' teaching performance. Specifically, it aims to answer the following:

1. Which among the following factors greatly contributes to the beginning teachers' teaching performance? a. Personal Information (age, sex, and socio-economic status), Educational Background (education bachelor's degree, type of TEI where the teacher graduated from, grade point average), and Professional Experience (DepEd region, category of the school where the teacher is deployed, teaching experience in DepEd, length of service in DepEd, and grade level taught)?
2. What policies toward the enhancement of the existing teacher education curriculum may be proposed based on the identified factors?

1.2 Related literature and studies

While it is widely acknowledged that myriads of challenges and issues beset educational systems, focusing the lens of investigation on the performance of teachers has always been the case pinned on the tacit and longstanding assumptions that the measure of teacher

performance is judged on students' learning outcome (Martin, 2018; SEAMEO INNOTECH, 2020; Organisation for Economic Cooperation and Development [OECD], 2019; Alatalo et al., 2021). There is a dearth of literature that examined Filipino teachers' teaching performance vis-a-vis their individual performance commitment review results (Gecolea, 2019; Junio-Sabio and Manalo, 2020; Sumanga et al., 2022). For instance, Gecolea (2019) only assessed the observance of school heads and teachers on the four phases of RPMS which were found to be ineffective due to the vagueness of the guidelines. Junio-Sabio and Manalo (2020) traced the performance of elementary teachers in a certain school in their two performance assessment tools (CBPAST and IPCR) over 5 years and found a very satisfactory rating. Notably, these local studies did not investigate factors that affect teachers' performance but rather only focused on how they fared using the tool itself. Hence, an exhaustive literature review on teachers' performance is also examined in the context of the factors that influence their motivation, job satisfaction, and retention in the field of teaching. As consistently reported in various literature, job satisfaction demonstrated a powerful influence on how beginning teachers survive and thrive in their profession (Thomas et al., 2019). Looking into the different factors affecting beginning teachers' performance is crucial in avoiding a high attrition rate as well as bolstering the performance of students.

1.2.1 Definition of "beginning teachers" and their status

Several terms describe teachers' teaching experience in the field for a combination of up to three to five years. The terms "graduate," "beginning," "early career," and "novice teacher" are often used interchangeably and inconsistently in several studies reporting observational measures of quality teaching (Graham et al., 2020). In this study, the term "beginning teachers" is defined as those teachers teaching in the public school setting for 3 years, regardless of their professional development training and prior work experiences. To illustrate, Ingersoll et al. (2014) examined factors affecting attrition rate among novice teachers and ruled out that within 5 years of entry, close to half (41%) of these new teachers leave the teaching profession due to dissatisfaction with school and underlying working conditions. Darling-Hammond (2017) articulated the need to provide support and monitoring to entry career teachers as the most powerful learning is just beginning as teachers enter their first classroom assignment. Hence, this study looked into different factors such as demographic characteristics, preservice education preparation, and work condition as having an influence on their teaching performance. Public school teachers' overall teaching performance is reflected in their RPMS which contains the major duties and responsibilities. Teachers must apply mastery of content knowledge in the teaching of subject matter together with the utilization of appropriate and innovative teaching strategies and practices. Such performance in teaching is assessed using the classroom observation tool. In addition to these, they have to manage a conducive learning environment and address learners' diversity (Sumanga et al., 2022). Teachers' commitment to their jobs results in better and higher performance that contributes to the significant growth and progress of the school (Delima, 2015).

1.2.2 On teachers' personal factors

A number of scholarly reports examined the influence of teachers' personal characteristics to their job satisfaction and teaching performance but a dearth of studies is observe correlating personal

factors vis-avis performance appraisal of beginner teachers. Generally, studies exploring the personal characteristics of teachers and how it is associated with their teaching performance were inconsistent. Pepe et al. (2017) identified personal factors as one of the perspectives affecting the ability of an individual to carry out a professional activity. In this study, personal factors correspond to the teachers' age, sex, and socioeconomic status. The non-ability aspect such as sex influences teachers' competence and their decision to join, remain, or leave the profession, thereby affecting their teaching performance (Lotz et al., 2018). SEAMEO INNOTECH (2020) reported that more female teachers opted to teach because of the preconceived perceptions that teaching is a woman's turf as manifested in their inclination toward children. Nazim and Mahmood (2018) surveyed public college teachers in Islamabad and revealed that although female teachers have higher satisfaction and sense of personal accomplishment in their job. Recently, Toropova et al. (2021) examined factors such as personal characteristics and school working conditions that affect their job satisfaction. They found out that sex has a significant association with job satisfaction such that female teachers who have had professional development reported being more efficient which translated to being satisfied in their job. Meanwhile, male teachers' job satisfaction was higher due to their extent of cooperation with other teachers in the planning and implementation of the instruction (Toropova et al., 2021). In the Philippines, the teaching workforce is still predominantly feminized in terms of the national trends with eight out of every 10 public school teachers, or 82% being females (SEAMEO INNOTECH, 2020). Local studies claimed that gender had no significant relationship with teaching performance (Cebreros (2011); Abarro, 2018). Another factor that has been consistently attributed to teaching performance is their socioeconomic status. This characteristic of teachers is characterized by their economic and social standing (American Psychology Association [APA], 2018). According to Werang (2014), teachers' teaching performance can be influenced by their socioeconomic status. Teachers with a high socioeconomic status are not only able to meet the basic needs of their families but they are also able to provide adequate learning facilities in order to develop their own capabilities as well as the capabilities of their students. Teachers with high socioeconomic status can even devote more time to lesson preparation. Teachers from low-income families, on the other hand, are struggling to meet their family's basic needs and can rarely provide facilities to develop their knowledge and skills needed in the classroom. Teachers also have little time to prepare for the teaching-learning process because they are too busy earning money for their families by teaching part-time in other schools, farming, and trading. As reported by Xiaoqiang (2018), when teachers' salaries from their primary occupation of teaching are insufficient to provide a basic or decent life for their families, they engage in sideline occupations. Moreover, teachers from low-income families often arrive at school exhausted and unfocused often associated with frequent mental health issues (Kim and Cho, 2020). As a result, teachers tend to find it difficult to carry out daily work activities in school affecting their performance. Moreover, job security, professional development opportunities, and job-related decision making are also hampered when an individual falls below their ideal socioeconomic status (Holm Christiansen and Nielsen, 2009). This phenomenon is explained by Kivimäki et al. (2020) wherein the occurrence of demand-resource imbalance (economic hardship) triggers stress responses. In the local context, Cebreros (2011) and Ali

et al. (2016) purported that teachers' socioeconomic status along with the amount of salary received significantly affects teaching performance. Lastly, the variable of age is worth investigating despite the scope of this research is within those teachers teaching in the public school system in their first 3 years [school years (2018–2019, 2019–2020, and 2020–2021)], some are experienced but novice in teaching or are in their second carrier. The inclusion of the age of the teachers as a potential predictor of teaching performance is necessary as the composition of beginning teachers in public schools varies in the age range. Sims and Fletcher-Wood (2018) presented evidence that teachers' age is slightly associated with their job satisfaction. In the US for example, teacher turnover is more pronounced among younger teachers than among their counterpart middle-aged colleagues (Kukla-Acevedo, 2009). One of the reasons is that younger female teachers choose family rearing and soon after some of them return to teaching afterward (Cooper and Davey, 2011). In addition, Nadeem et al. (2011) claimed that age is a significant predictor of teachers' job performance among their female teachers respondents with the majority of beginning teachers expressing no intention of retiring as a teacher as compared to those who have been in the profession for more than a decade or so. Cebreros, 2011 found that age was one of the significant factors in teaching performance however, Abarro (2018) negated such a claim.

1.2.3 On teachers' educational factors

Many researchers supported the notion that strong academic credentials appear to increase a teacher's effectiveness in the classroom as it is attributed to their capacity for critical thinking, analysis, and problem-solving—skills that are directly applicable to instructional tactics, lesson design, and classroom management (Goldstein, 2008). Thus, examining beginning this factor in the content of those who are still in the early careers of teaching is crucial as it may provide input on their professional development and provision of mentoring support. Recent scientific reports revealed consistent findings that educational attainment served as a significant factor affecting teaching performance (Cebreros, 2011; Abarro, 2018; Sumanga et al., 2022). It can be regarded that teachers with higher educational attainment tend to perform better in teaching. This could be because teachers develop in-depth knowledge of their field resulting in high performance. Generally, attaining higher education and attending training improve teaching quality performance (Sumanga et al., 2022). While there is a scarcity of educational research investigating the role of the degree program and its corresponding specialization on teaching performance or job satisfaction, few studies identified the areas of specialization prone to attrition which are mathematics and science. Teachers in these subjects are highly in demand of other career opportunities compared to other degrees resulting in a higher attrition rate for mathematics and science teachers (Guarino et al., 2006; Sims, 2019). Teachers' academic achievement is an important characteristic of teacher quality as demonstrated in their content and pedagogical competence (Harris and Sass, 2009). Hanushek et al. (2019) examined the cognitive skills of teacher education applicants coming from top-performing countries in international standard assessment to examine differences in the educational systems. They utilized secondary data from 31 countries as reported by the Programme for International Assessments of Adult Competencies (IAAC) and the Programme for International Student Assessment (PISA). They found out that Singapore, Finland, and Korea recruit teacher candidates

from the top third of the academic cohort which they correlated with student performance in the international exams. In the Philippines, teacher recruitment particularly in the public school requires a certification that the applicant has passed the Licensure Examination for Teachers (LET) regardless of whether their scholastic records are exemplary or not. Alatalo et al. (2021) reported a decline in teachers' average grades over a two decades period which they attributed as a factor characterizing a change in the recruitment patterns which is likely one of the reasons affecting teacher quality. Moreover, a higher grade average is observed among secondary school teachers than primary school teachers. In terms of discipline, teachers who specialize and handle natural sciences have better GPAs than social sciences and language teachers. In the comparative assessment of the educational systems and policies done (Darling-Hammond, 2017) among these top-performing countries, a common policy they implement is on teacher recruitment as they require a high-grade point average as part of their criteria for recruitment of teachers as part of the educational reform that capitalizes on high-quality preparation translates to teaching effectiveness. Another interesting educational factor to be examined is the type of TEI where these beginning teachers graduated from. Teacher preparation is crucial in the rigorous teacher recruitment process. Upon entry into the teaching workforce should be coupled with continuous mentoring and evaluation before receiving tenure (Kini and Podolsky, 2016). Unfortunately, as good as their preservice education training might have been, it often conflicts with the reality of the classroom leading to the feeling of unpreparedness to deal with students, parents, colleagues, and the school culture in general (Stanulis et al., 2002). These teachers come from different backgrounds and possess different classifications, competencies, and motivations for being in the profession (SEAMEO INNOTECH, 2020). To cope with the changing demands and systems in education, teacher education institutions need to constantly revise their curricular framework to allow for the assimilation of knowledge, practice, and reflection of their experiences in the field (Penuel et al., 2007). Some universities implemented reforms in teacher training institutions such as that of Australia that involved formal accreditation processes (Churchward and Willis, 2019). Hence, the quality of teacher preparation programs is one of the factors contributing to the higher attrition rate of teachers (Geiger and Pivovarova, 2018). In the local study of Abarro (2018), he pointed out that the type of TEI which the teacher graduated from has no bearing on the teacher's performance.

1.2.4 On teachers' professional factors

School environments and working conditions are purportedly significant factors in the higher rates of teacher turnover and absenteeism (UNESCO, 2019). These factors are indicated by category of the school where the teacher has deployed, length of service, grade level taught, and their teaching experience. School category in this context is equated to the class size that oftentimes in the literature purported to affect teachers' perceptions of the weight of their workloads. This prompted the Department of Education to set the ideal class size with a maximum of students depending on the year level for the student-teacher ratio (Hernando-Malipot, 2018). However, some teachers in both rural-coastal areas and urban settings reported handling many classes with large class sizes ranging from 40 to 53 students, and sometimes they are teaching different grade levels and subjects (SEAMEO INNOTECH, 2020). The daily routine at

school can be overwhelming to these beginning teachers with a higher expectation on them to carry out their functions and adapt to the community and school culture (Kyriacou and Kunc, 2007). Lack of support from the school where the teacher belongs in the form of a shortage of classrooms and teaching materials affects teachers' motivation which consequently affects their teaching performance (Sugino et al., 2017). For instance, those teachers assigned in schools with poor facilities and resources, high poverty level, bigger school size, and the ethnic composition have a higher attrition pattern (Toropova et al., 2021; Brill and McCartney, 2008; Hughes, 2012). Teaching workload is another facet of teacher quality that received more attention considering that various literature highlights it as one of the predictors of job satisfaction, motivation, and teaching performance. Kini and Podolsky (2016) revealed that job satisfaction perception is moderately influenced by the grade level taught favoring high school teachers as compared to the middle school teachers. Kelly et al. (2019) investigated the complex factors influencing early career teachers (ECTs) decision to leave or stay in the teaching profession. From the 2,144 Australian ECTs, they explored the association of the different elements of preservice education, early career support, and on-the-job satisfaction vis-à-vis leaving the profession. One of the findings that relate to the variable investigated in the current study is that job satisfaction may influence one's decision to stay in the profession and consequently translate to better teaching performance. While this study explores different variables affecting beginning teachers' performance, Kelly et al. (2019) report that working at the primary schooling level in comparison with working at the secondary schooling level significantly predicted retention, supporting the contention that the year level taught affects the performance of beginning teachers in the context of workload. This observation could be due to the supply and demand of instructional time relative to the grade level such that UNESCO (2023) stipulated that the adequate amount of time for teaching and learning at the secondary level is more than the 850–1,000 instructional hours at the primary level. Both the preservice and in-service training should equip teachers with the skills and competencies to effectively use instructional time and class management (UNESCO, 2023). This argument relates to the performance of beginning teachers concerning the level taught as the literature claims that it influences quality teaching and student learning outcome. Kini and Podolsky (2016) further second this claims through their review paper that attributed teaching effectiveness to teachers' accumulated experience teaching in the same grade level, subject, or district. As a result, student achievement gains and increased school attendance are positively associated with increased teaching experience. In the Philippine context, a nationwide survey conducted by SEAMEO INNOTECH (2020) in coordination with the Department of Education explored the motivation to join and remain in the teaching profession in the Philippines. Results revealed teachers' actual nuances pertaining to their workload between elementary teachers as compared to their counterparts at the secondary level. Proportions of teachers handling monograde and multigrade vary both at the elementary and secondary levels. They also spend longer than the required number of work hours to perform both teaching and non-teaching activities. One viable solution proposed to reduce the burnout on workload and longer work hours among teachers is to give a stable job assignment in the same grade level or subject area to be more well versed with content and pedagogies (Guajardo, 2011). As to the grade level and its associated

content area, secondary teachers are less likely to remain than elementary teachers (Guarino et al., 2006; Kukla-Acevedo, 2009) which may be due to other career opportunities available for them. For middle school teachers, one of the reasons that affect their performance which result to the decision to leave their profession is problems associated to behavioral problems among adolescent students (Brill and McCartney, 2008).

In terms of the teaching experience factor, Kartini et al. (2020) found that those with teaching experience of more than 6 years demonstrated mastery of content than the new ones. This is consistent with the findings of Zafer and Aslihan (2012) and Ismail et al. (2018) observation that these group of teachers demonstrated classroom management skills and better instructional decision making resulting to teacher agency and teaching effectiveness. The accumulated years of experience develop sense of confidence and self-efficacy to engage with learners and other stakeholders (Putman, 2012). Interestingly, the many years of teaching experience also became a factor contributing to lower motivation and burn out in dealing with students and using varied teaching strategies (Smetackova, 2017). Recent investigation by Topchyan and Woehler (2021) revealed a contrasting finding such that both beginning and experience teachers support each other in carrying out their duties and functions as teachers rendering better job performance. Hence, they claimed that the length of service has no bearing on job satisfaction and teaching performance. The prior teaching experience of teachers in this study refers to their previous work in other institutions of learning such as private schools. Cebreros (2011) revealed that teaching experience is one of the significant predictors of teaching performance. In the study of Sumanga et al. (2022) on junior high school teaching performance using the RPMS tool who performed very satisfactorily, most of their respondents had 1–5 years of teaching experience but they did not indicate whether these teachers came from private schools or higher education institutions prior to joining the public basic education schools.

2 Methodology

2.1 Research design

This study utilized a regression research design. Regression research is quantitative research that is used in exploring and analyzing explanatory variables and establishing their relationship with the dependent variable. This study aimed to identify variables that have some sort of relationship to the teacher performance of the beginning teachers in the Department of Education.

2.2 Research participants

The participants are the licensed beginning teachers of the Department of Education (DepEd) who are in their induction years (1–3 years) in teaching and graduated from the state-funded teacher education institutions in 2016 onwards. Using Cochran's sample size formula for an infinite population and assuming maximum variability, a level of confidence of 95%, and a margin of error of 5%, the minimum sample size is 385. In this study, 2,680 DepEd teachers, from the sixteen (16) regions in the country (excluding BARMM) who satisfied the inclusion criteria, are included in the study.

2.3 Research instruments

This study utilized an expert-validated survey questionnaire to gather data on two key areas: (1) teachers' personal profiles and (2) their teaching performance, as measured by the RPMS-PPST (Results-Based Performance Management System – Philippine Professional Standards for Teachers) tool. The questionnaire's development involved consultations with field experts to ensure that the questions aligned with the study's objectives. It collected information on teachers' profiles, including type of teacher education institution, grade level taught, licensure examination rating, grade point average, socio-economic status, teaching experience, length of service in DepEd, DepEd region, age, sex, school category, and education degree. These variables are articulated in Table 1. The RPMS-PPST, a validated framework, is used to evaluate teacher performance across five key result areas, promoting professional growth and aligning educators with national standards to improve education quality and is reflected in their Individual Performance Commitment Review (IPCR). The RPMS-PPST tool defines the duties and responsibilities of teachers across career levels; the Key Result Areas (KRAs) for the achievement of the specified duties; the particular objectives for the attainment of KRAs; the different Means of Verification (MOV) which serve as evidence of accomplishing the objectives alongside performance indicators, from outstanding to poor (Olvido et al., 2024).

2.4 Data collection

After the ethics clearance from the CNU-REC (Cebu Normal University – Research Ethics Committee) and permission from the central office of the Department of Education (DepEd), data was collected from the teacher-respondents. Results of the RPMS-PPST, socio-demographic characteristics, and educational background of the public school teachers were self-reported by the teachers in the survey questionnaire. Data were consolidated using a spreadsheet (MS Excel)

TABLE 1 Description of the variables examined in the study.

Variable	Description of the data collected
Teaching performance	The standardized tool of the Department of Education's Philippine Professional Standards for Teachers (PPST) based Results-Based Management System (RPMS) where the overall ratings for the previous three years of teacher is collected
Sex	Refers to male or female teacher
Socioeconomic status	Based from 2018 Philippine Institute for Development Studies (PIDS) income brackets monthly combined gross family income
Type of HEI	State-funded or SUC, non-state funded
Grade point average	Final Grade point average during the undergraduate degree reflected in their transcript of records
School classification	Basic education school classification according to DepEd (small/integrated, medium, large, and mega)
Level taught	Pre-School, Elementary, Junior High School, Senior High School

for analysis. All information collected from the survey was treated and kept with the utmost confidentiality.

2.5 Data analysis

The data were analyzed using MS Excel and SPSS. Descriptive statistics were utilized to describe the profile of the teachers. To determine which among the variables served as predictors of teaching performance, multivariate regression analysis was employed. The level of significance of the different factors investigated was based on a p-value less than 0.05.

3 Results and discussion

3.1 Factors that contribute to beginning teachers' teaching performance

As described in the study of Gepila (2020), beginning teachers' entry into the teaching profession requires the acquisition of a set of qualifications. This includes an in-depth understanding of the content and pedagogy, the knowledge, skills, and attitudes to support a facilitative learner-centered environment, and to manage learning situations anchored on the student's learning needs. Similarly, the Philippine Professional Standards for Teachers (PPST) succinctly describes the varied competencies that beginning teachers must possess to promote student learning. Their characteristics as shown in Table 1 describe these teachers.

As presented in Table 2, approximately half of the beginning teachers in the Department of Education are younger than 26 years old and approximately half are older than 26 years old. The first quartile and second quartile of their age are 25 and 28, respectively. This means that the middle 50 % (50%) of the beginning teachers are from 25 years old to 28 years old. Majority of the them are female accounting for around 76 % (76%) of the group and earning Php 21,914–43,828 monthly.

About half of the beginning teachers are graduates from state-funded teacher education institutions, while the rest are distributed among private and local government-funded teacher education institutions. On average, they have a cumulative grade point average (GPA) of 60.38 in teacher education institutions. This suggests that the average GPA is generally around the 60th percentile of the passing grades. Around 54 % (54%) of them are degree holders of Bachelor of Secondary Education, around 38 % (38%) are degree holders of Bachelor of Elementary Education, and around 8 % (8%) have a diploma in Professional Education.

Most beginning teachers in the Department of Education are currently working in either medium or large public schools and only a few work in mega public schools. The biggest proportion of the group is Junior High School teachers, then followed by a proportion of elementary teachers. There is only a small proportion of Senior High School and Pre-School teachers. Approximately 45 % (45%) of them have experience in teaching in private learning institutions with an average length of experience of 2 years.

Regression analysis was done to determine significant factors of the beginning teachers' performance, measured by the Results-Based Performance Management System (RPMS) scores. The regression

model that accounts for the total variation in the average RPMS scores is presented in Table 2.

As can be gleaned from Table 3, the value of our R^2 is 0.034, or 3.4% of the total variance in education length has been 'explained' by the regression model. In some fields such as social sciences, it is entirely expected that the R^2 is low. An attempt to predict human behavior typically has R^2 lower than 0.50. While the physical processes are easier to predict than human behavior the significant F-change in Table 3 means that the predictors added in that step significantly improved the prediction. The Analysis of Variance (ANOVA), which provides the analysis of the variance in the regression model, is presented in Table 4.

TABLE 2 The newly hired teachers' profile.

Characteristics	Values
[3]Age *in years*	26.00 (25–28)
[2]Sex	
Male	640 (23.88)
Female	2040 (76.12)
[2]Socio-economic status	
Php 21, 914 – Php 43, 828	2,416 (90.15)
Php 43, 828 – Php 76, 669	171 (6.38)
Php 76, 669 – Php 131, 484	60 (2.24)
Php 131, 483 – Php 219, 140	21 (0.78)
Above Php 219, 140	12 (0.45)
[2]Type of TEI where the teacher graduated from	
State-funded	1,356 (50.60)
Private and Local Government-funded	1,324 (49.40)
[1]Grade point average (GPA)*	60.38 (15.40)
[2]Education Bachelor's Degree Program	
Bachelor of Elementary Education	1,015 (37.87)
Bachelor of Secondary Education	1,454 (54.25)
Diploma in Professional Education	211 (7.87)
Teaching experience in private school	
[2]With	1,200 (44.78)
[1]Length of experience	2.01 (1.86)
[2]Without	1,480 (55.22)
[2]Classification of the school where the teacher is deployed	
Small	603 (22.50)
Medium	877 (32.72)
Large	960 (35.82)
Mega	240 (8.96)
[2]Level taught	
Pre-School	67 (2.50)
Elementary	1,088 (40.60)
Junior High School	1,269 (47.35)
Senior High School	256 (9.55)

Values are presented in [1]mean (standard deviation), in [2]frequency (percentage), and in [3]Median (Q1 – Q3); *GPA = (|grade minus minimum passing grade|/Range of the minimum and highest possible passing grade) * 100 (n = 2,680).

TABLE 3 Model summary.

R	R^2	Adjusted R^2	Std. error of the estimate	Change statistics				
				R square change	F change	df1	df2	Sig. F change (P-value)
0.183[a]	0.034	0.029	0. 56,096	0.034	7.727	12	2,667	0.000*

*Significant at 0.05; a. Predictors: (constant), type of teacher education institution, grade level taught, overall rating in licensure examination, GPA, socio-economic status, teaching experience in DepEd, length of service in DepEd, DepEd region, age, sex, DepEd School Category, Education Bachelor's Degree; b. Dependent variable: average RPMS scores.

TABLE 4 Analysis of variance (ANOVA)[a].

Model	Sum of squares	df	Mean square	F	P-value
Regression	29.176	12	2.431	7.727	0.000[b]*
Residual	839.236	2,667	0.315		
Total	868.412	2,679			

*Significant at 0.05; a. Dependent variable: average RPMS Scores; b. Predictors: (constant), type of teacher education institution, grade level taught, overall rating in licensure examination, GPA, socio-economic status, teaching experience in DepEd, length of service in DepEd, DepEd region, age, sex, DepEd school category, Education Bachelor's Degree.

The *p*-value is less than 0.05, indicating that a significant relationship exists between the dependent variable and predictors. Even though the R^2 is low, statistically significant predictors are noted which are associated with changes in the average RPMS scores. Table 5 that follows shows the significant factors of the beginning teachers' teaching performance in the Department of Education. In Table 5, it is revealed that socio-economic status, GPA, length of service in DepEd, and grade level taught are significantly associated with the beginning teachers' average RPMS scores. The coefficients of these significant predictors suggest that after-effects of the other predictors are taken into account, (a) teachers with higher socio-economic status income will score 0.061 higher in the RPMS than the reference group (teachers with income Php 21,914-Php 43,828); (b) as one unit of the GPA increases, the teacher's RPMS score will increase by 0.003; (c) as the length of service in the Department of Education increases by 1 year, the RPMS also increases by 0.046; and (d) teachers in elementary and levels will score 0.103 higher in the RPMS than the reference group (pre-school teachers).

3.1.1 Socioeconomic status for personal factor predicts teaching performance

One of the personal factors that emerged as significant predictors of beginning teachers' performance is socioeconomic status. Teachers with higher socioeconomic status in terms of income have higher RPMS ratings than those who are earning 21,914php – 43,828php. This is supported by previous research findings that socioeconomic status influences teachers' teaching performance (Nadeem et al., 2011; Werang, 2014; Xiaoqiang, 2018). Moreover, the study of Werang et al. (2017) confirms teachers' SES to have a positive significant effect on their school lives, on their regard of their job, and on their commitment to the institution. The reasonable salary of teachers motivates them to work harder and more dedicately because they can focus on their jobs without worrying about how they will make ends meet each month (Nadeem et al., 2011). Teachers with a high socioeconomic status are not only able to meet their families' basic needs, but they are also able to provide adequate learning facilities to develop their own as well as their students' capabilities (Werang,

2014). Teachers with high socioeconomic status have more time at home to prepare instructional materials and to check students' work.

In contrast, Werang et al. (2017) found that teachers from low-income families struggle to meet the basic needs of their families and can rarely provide facilities to develop the knowledge and skills needed in the classroom. Teachers also have little time to prepare for the teaching-learning process because they are too busy making ends meet by teaching part-time in other schools, farming, and trading. Teachers engage in sideline occupations when their salaries from their primary occupation of teaching are insufficient to provide a basic or decent life for their families (Xiaoqiang, 2018). As a result, teachers from low-income families may enter the classroom unfocused, concerned with earning enough to support their family's needs rather than addressing the needs of their students. Furthermore, Kim and Cho (2020) revealed that low socioeconomic status is associated with more frequent mental health problems which can lead to teachers' difficulty in carrying out their daily work activities affecting their teaching performance.

3.1.2 Grade point average for educational factor predicts teaching performance

The results show that among the educational factors attributed to beginning teachers, grade point average moderately influences their RPMS rating. As one unit of the GPA increases, the teacher's RPMS score also increases by 0.003, implying a gradual improvement in teaching performance. This supports several studies, which demonstrate positive relationships between GPA and measures of teaching performance. In particular, D'Agostino and Powers (2009) opined that teachers' GPA is a modest predictor of teaching competence, although performance assessments were significantly better at predicting teaching skills. Moreover, Orphanos (2008) revealed that there is a positive relationship between teachers' academic performance and their relative ranking based on ratings given by their principals, peers, and student's parents. He added that teachers with higher GPAs tend to receive higher overall effectiveness ratings. The higher teaching performance rating of those with higher GPAs can be attributed to their expertise in the subject matter, which is one of the criteria used in assessing a teaching performance.

A teacher's GPA appears to be a reasonable predictor of effective teaching performance – a high GPA indicates the individual has a significant degree of competence. It's no surprise that some institutions use it as a screening tool when hiring teachers and even when qualifying aspiring teachers. For instance, Singapore and Finland recruit teacher applicants from the top third of the academic cohort as part of their educational reform that capitalizes on high-quality preparation translates to teaching effectiveness (Darling-Hammond, 2017). Interestingly, these countries that include the high-grade point average as one of the criteria for recruitment of teachers are also the performing countries in terms of PISA results. This implies that preparation is important, and that

TABLE 5 The factors of beginning teachers' performance (*n* = 2,680).

Model	Unstandardized coefficients		Standardized coefficients	*T*	*P*-value	95% confidence interval for beta	
	Beta	Std. error	Beta			Lower bound	Upper bound
Personal factors							
Sex *Reference group: male*	−0.006	0.026	−0.004	−0.219	0.826	−0.057	0.045
Age	3.65E-5	0.002	0.000	0.023	0.981	−0.003	0.003
Socio-economic status *Reference group: Php 21,914–Php 43,828*	0.061	0.021	0.056	2.924	0.003*	0.020	0.102
Professional factors							
DepEd region *Reference group: Region I*	−0.006	0.003	−0.038	−1.877	0.061	−0.011	0.000
Teaching experience in DepEd *Reference group: No*	−0.003	0.023	−0.002	−0.124	0.901	−0.047	0.042
Length of service in DepEd	0.046	0.010	0.089	4.667	0.000*	0.027	0.066
DepEd school category *Reference group: Small*	0.011	0.013	0.018	0.861	0.389	−0.014	0.037
Grade level taught *Reference group: pre-school*	0.103	0.024	0.124	4.216	0.000*	0.055	0.150
Educational factors							
GPA	0.003	0.001	0.085	4.417	0.000*	0.002	0.005
Education bachelor's degree *Reference group: Bachelor of elementary education*	−0.038	0.027	−0.040	−1.381	0.167	−0.092	0.016
Type of teacher education institution *Reference group: private/LUCs*	−0.010	0.022	−0.009	−0.458	0.647	−0.053	0.033

Dependent variable: average RPMS Scores; *significant at 0.05.

screening potential teachers, such as by considering their GPA, could have a positive impact on their teaching performance in the future.

However, Rockoff et al. (2011) discovered no significant relationship between teachers' academic achievement in the teacher education program and their teaching performance in the classroom. Moreover, as cited in Corcoran and O'Flaherty (2018), found that teachers' academic ability at the start of teacher preparation, was not a significant predictor of teaching performance. The same findings were revealed in the study of Nicely (2007) that a high GPA does not significantly correlate to a high-performance evaluation score; suggesting that GPA should not be highly considered when hiring teachers. It was further noted that some teachers with high GPAs have lower performance evaluation scores, whereas some teachers with low GPAs have higher performance evaluation scores. This may cause concern among stakeholders at teacher education institutions with tougher grading standards. The high standards with which aspiring teachers are held may be misinterpreted as poor teaching performance.

3.1.3 Grade level taught and length of service for professional factors predict teaching performance

A notable finding in this study is the significant relationship between the grade level taught and the RPMS rating of the teachers which constitute the professional factors. The results show that

teachers in the Elementary level and Secondary levels score 0.103 higher in the RPMS than the Preschool teachers. This can be attributed to preschool teachers' immense physical, emotional, and mental responsibilities. According to Kim et al. (2020), the first 5 years of teaching are stressful for preschool teachers because they are making adjustments while dealing with an enormous amount of work. This may have had an impact on their teaching performance. Moreover, in the study conducted by Perez (2019), the early childhood teachers expressed that as new teachers, they struggled with the realities of teaching young learners despite their college training. In contrast, the study of Rubie-Davies et al. (2012) revealed that a greater teacher efficacy, in terms of student engagement and classroom management, was observed among teachers assigned to younger students than those with older ones. Kini and Podolsky (2016) explained that teaching load assignment matters because they develop mastery and competence over time when they teach in the same grade level and subject matter.

One of the significant predictors of teaching performance among the DepEd *beginning* teachers is their length of teaching service. This observation is consistent with a recent finding of the systematic review on this area claiming that teaching experience increases effectiveness (Kini and Podolsky, 2016). Such finding that length of service is contributory to teaching experience is also supported by several researches. Kartini et al. (2020) maintained that teachers with more years of teaching were more knowledgeable than those who had fewer

years of teaching experience. Moreover, the study of Zafer and Aslihan (2012) revealed that classroom management is linked with more years of teaching experience while Putman (2012) supported the idea that teachers' self-efficacies to engage their students are associated with more years of teaching experience.

Meanwhile, some reports contrast this finding suggesting that the longer the teachers stay in the service, there is a declining pattern in their teaching performance attributed to less engagement with students and lower motivation (Haq and Akhtar, 2013). On the other hand, Pescuela (2015) and Topchyan and Woehler (2021) negate the current findings as they rule out the length of service as a predictor of teaching performance considering that teachers, new or tenured, help each other toward better teaching performance in terms as measured by their effectiveness, efficiency, and timeliness. Interestingly, this factor of teaching performance may be accounted to the prior teaching experience of these beginning teachers in the private school which accounted for 45% while those without prior private school experience (55%) may have had prior non-teaching work experience which may be relevant to their skills and values as a teacher necessary to cope with the demands of the teaching profession. Length of service may also explain why age as a variable is a significant predictor of teaching performance.

Generally, other factors initially identified (e.g., age, sex, category of school they are assigned, teaching experience, specialization, and the type of Teacher Education institutions where they earned their preservice teacher training did not pose a significant association with their teaching performance). While the current findings of this study produce varied results with other recent literature on teachers' performance and teacher's job satisfaction and motivation, important insights can be gleaned on the teacher education preparation, recruitment process, and induction program.

3.2 Proposed policies toward the enhancement of the existing teacher education curriculum

3.2.1 Development and adoption of quality assurance mechanisms

Upon pre-service teachers' completion of the prescribed curriculum for the teacher education program, TEI development and adoption of quality assurance mechanisms to assess exit teaching competencies of the would-be teachers is of paramount importance. The assessment shall include, but not be limited to the adoption of a tool to check the extent of knowledge and application of the 37 beginning teacher indicators (BTIs) as embodied in the Philippine Professional Standards for Teachers. Integrated with the tool are the various mode of verification that provides evidence of PST performance tasks. Since the length of teaching experience significantly influences the teaching performance, the number of teaching demonstrations, teaching simulations, and school immersions during the experiential learning phase has to be central to the tool. Teaching simulations for both face-to-face and online may be considered accounting for the emerging educational needs.

3.2.2 Academic coaching and mentoring

Academic coaching and mentoring are also advanced as a potent way to strengthen academic performance by focusing on the learning

and development needs of the pre-service teachers including curricular enhancements in the handling of out-of-field classes. This is consistent with DepEd's learning action cell where groups of teachers led by an experienced mentor engage in collaborative learning sessions to address personal and professional challenges encountered in school. Mandated by DepEd through a memorandum order (DO 50, s. 2020), teachers have to undergo continuous upskilling that will result in better learning outcomes.

With this, a policy and guidelines on coaching and mentoring is put forward with the view of identifying and mapping priority areas for the subject and year-specific learning standards.

3.2.3 Strengthening financial literacy among pre-service teachers

Financially literate teachers can understand and effectively use various financial skills to make informed financial decisions and increase financial responsibility. This literacy can help them manage resources effectively without compromising their teaching performance. In consideration of the identified predictors of beginning teachers' teaching performance, acknowledgment of SES along with academic performance while in school, competencies per grade level, and length of teaching experiences, the aforementioned policies were deemed necessary for the enhancement of the pre-service teachers' education curriculum.

4 Conclusion and recommendations

The annual results-based performance management system ratings of the beginning teachers were used as a proxy measure of the beginning teachers' teaching performance. The exploration of the beginning teachers' characteristics especially on the identified external (SES, level taught) and internal (GPA and length of service) factors inform teacher education institutions' curricular delivery anchored on the realities of teaching and in recognition of situated learning.

Teaching compensation leads to teaching job satisfaction which motivates teachers to work harder. Considerably, as beginning teachers' teaching performance is attributed moderately to their grade point average supports the inclusion of grade requirement for aspiring teachers to be given a plantilla item in DepEd. Also, the quality of engagement and pre-service training give credence to the quality of in-service teachers. High-quality preparation translates into teaching effectiveness.

Acknowledging that self-reported data from the respondents, the use of RPMS ratings as the sole measure of teaching performance, and the focus on a specific cohort of beginning teachers posed limitations to the generalizability of the findings to other educational contexts or countries, future research could build on the findings by exploring other variables and using other research designs.

While alignment of preservice training programs and in-service teaching practices may be explored to understand the transition from teacher education to professional practice, curriculum quality assurance in higher education institutions must be established. Further investigations may focus on other factors influencing teachers' performance to help shape evidence-based policies that support teacher quality. For future research direction, researchers can focus on differentiating the predictors in terms of highlighting those that are most advantageous at different levels (individual, group, or the

organization itself) in the context of teaching performance. In this way, the areas for improvement could be more easily identified and organized at these different levels. In attracting the best to teach in the Department of Education, it is vital to look into the exit pre-service teachers' competencies acquired during the four-year teaching preparation toward defining the characteristics of the beginning teachers. In addition, career stage-specific professional standards and competencies of beginning teachers are best understood by focusing on strong predictors of performance during the teaching preparation phase while still acknowledging those traditional indicators of competence, with a minimal variance of performance, such as the rating in licensure examination, type of school, age, and sex toward quality pre-service teacher preparation.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were approved by the University Ethics Research Committee of Cebu Normal University CNU-REC Code (1019/2021-10). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

RB: Conceptualization, Investigation, Methodology, Writing – original draft, Writing – review & editing. MP: Conceptualization, Investigation, Methodology, Writing – original draft, Writing – review & editing. NP: Investigation, Validation, Writing – review & editing. VB: Data curation, Formal analysis, Software, Validation, Writing – review & editing.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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