

Graduate Teacher Education in the Philippines: Observations and Prospects

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Abstract In cognizance of the role of graduate education in human capital development and nation building, the present study aimed to assess the status of graduate teacher education in the Philippines by describing the profile of graduate teacher education programs in both public and private higher education institutions (HEIs). To achieve the purpose of the study, the researchers used a descriptive research design wherein profile data on HEIs' program offerings, program accreditation levels, and enrolment and graduation data were gathered from the Philippine Commission on Higher Education (CHED) 2017 databases. The research yielded results which served as basis for the researchers in making observations and identifying prospects for improvement of the quality of profile and status of the country's graduate teacher education programs. The implications of the results to policy development, curricular reforms, and future research are discussed.

Keywords: graduate teacher education, higher education institutions (HEI), Philippines

Introduction

The Philippines is in the midst of educational reforms that are driven by global and national developments and trends that affect the Philippine education system (Roadmap for Philippine Higher Education Reform, 2011). These include internationalization and globalization of education (Wells, 2017), global rankings (Hazelkorn & Gibson, 2017), and outcomes-based education (Rao, 2020). There is also a call for the assessment of Philippine educational policies and programs to determine if these are attuned to the needs of society (Durban & Catalan, 2012). Similarly, Ingvarson and Rowley (2017) stressed the need for countries to establish strong educational policies on quality assurance to maintain strong performance in large scale assessment of student achievement. As these current trends and reforms to policies and programs in the basic and higher education levels are also cascaded to graduate education, it is important to assess the status of graduate education programs in the Philippines in general and the status of graduate teacher education programs in particular.

Assessing the state of graduate education is valuable as about one quarter of higher education institutions (HEIs) have graduate program offerings (International Qualifications Assessment Service, 2016). The focus on graduate teacher education is needed because of the need to capacitate teachers to meet the demands of the K to 12 curriculum which makes it imperative for teachers to develop competencies that are more advanced than what is being developed in undergraduate programs. The enhancement of teachers' quality should be given importance as it relates to sustainable nation building (Gepila Jr., 2020). Indeed, one of the key areas in the Department of Education's (DepED) *Sulong Edukalidad* program is quality education through teachers' upskilling and reskilling through professional development programs. The enhancement of teacher quality is congruent with the

country's goal of accelerating human capital development as articulated in the Philippine Development Plan 2017-2022. Graduate education can be one mechanism for teachers to develop their competence. It is also expected that graduate education will provide the opportunity for teachers to develop an understanding of criteria for quality research in order to become better consumers of knowledge (Moulding & Hadley, 2010).

With DepEd's adoption of the Philippine Professional Standards for Teachers (PPST) which articulates higher level of standards for teachers that may be developed in graduate studies, the role of graduate education is more critical than ever. The Policies and Standards for Graduate Programs (PSG) in Education for Teachers and Other Education Professionals (CHED Memorandum Order No. 53, series of 2007) explains that graduate studies in teacher education is an effective means of improving the capacities of education professionals who aim to contribute to educational processes like teaching and management of educational programs. Moreover, the recent Policies, Standards, and Guidelines for Graduate Programs (CHED Memorandum Order No. 15, series of 2019) articulates that graduate programs have the role of spurring and sustaining advanced competencies like creative and effective learning and teaching, scientific and technological growth, and leadership and innovation. Thus, there is a need for graduate teacher education programs to have the qualities that can meet the demands of the educational reforms and societal issues that the country is currently experiencing.

A review of literature on teacher education in the Philippines suggests that research in this area are more focused on pre-service teacher education. These include studies that describe government investment in teacher education (Abulon et al., 2014), student teachers practicum experiences (Ulla, 2016), and student teaching program (Calapardo et al., 2016). Therefore, expanding

the literature on teacher education by focusing on graduate teacher education programs is imperative. The Philippine Commission on Higher Education (CHED) funded a study on the state of graduate education programs in the Philippines using data from available CHED databases (Ofreneo, 2014a). The study indicated that the most widely offered master's and doctorate programs in the Philippines are in Education. This information provided further support on the importance of assessing the status of graduate teacher education programs in the Philippines.

The Present Study

The present study aimed to assess the status of graduate teacher education in the Philippines in terms of the profile of graduate teacher education programs in HEIs. The study could synthesize information on the status of graduate teacher education programs in the country that would be an important output that has direct implications to policy, program standards, and practice in teacher education in the Philippines.

Specifically, the present study profiled the graduate teacher education programs in the Philippines in terms of the following: (1) programs offered; (2) accreditation level; (3) enrolment data; and (4) graduation data. The study also assumed that these four areas for profiling could provide a basic but informative picture of the nature (What are the programs offered?), quality (What are the programs' accreditation level?), demand (How many are enrolled in the programs?), and success (How many graduated from the programs?) of graduate teacher education programs across all higher education institutions in the Philippines. The focus on program offerings, enrolment and graduation data was adopted from the study of Ofreneo (2014a). Looking at the program offerings will provide information on the availability and diversity of graduate teacher education programs for

teachers and other school personnel. Meanwhile, enrolment data can provide information on which programs are popular or in-demand, whereas graduation data can supply information which programs are successful in terms of completion rate. Additionally, data on accreditation level was sought to inform on the quality of graduate teacher education programs as assessed by external agencies.

Methodology

The study used a descriptive research design with the aim of providing descriptions of the profile of graduate teacher education programs in the Philippines. The researchers gathered the profile data from CHED. These profile data were available in the 2017 CHED databases (Commission on Higher Education, 2017) on all private and public higher education institutions (HEIs). These data refer to the HEIs' graduate teacher education program offerings, accreditation levels of these programs, and graduate students' enrolment and graduation data.

Documentary analysis was conducted wherein profile data from the databases were examined visually. Available quantitative data (frequency count) were extracted from the databases and percentage were computed whenever applicable. Quantitative data were summarized into tables to provide an overview of the profile of graduate teacher education programs across the HEIs. Graduate programs were clustered and data on program offerings, accreditation level, enrolment and graduation were analysed per cluster. The researchers deliberated until consensus was achieved in the clustering of programs.

Results and Discussion

This study purported to describe the profile of graduate teacher education programs in the country. The results of the study served as reference for making observations on the profile and status of graduate teacher education programs in the Philippines. These observations have important implications to educational practice, policy, and research in graduate teacher education. Side by side with these observations, this study also identified prospects for development or improvement of the state of the country's graduate teacher education programs.

Graduate Teacher Education Programs Offered

Based on the 2017 data from CHED, there are about 486 different universities and colleges in the Philippines that offer graduate teacher education programs. Tables 1 shows the frequencies of programs offered in the master's and doctorate level according to their cluster. Frequency count and percentage were used as descriptive statistics.

Table 1.
Teacher Education Programs in the Master's and Doctorate Level.

| Program Cluster | f | % |
|--------------------------------------|--------------|------------|
| <i>Master's</i> | | |
| Arts and Languages | 599 | 21.29 |
| Behavioral and Social Sciences | 398 | 14.14 |
| Education Sciences | 784 | 27.86 |
| Knowledge Management | 23 | .82 |
| Others | 169 | 6.01 |
| Physical Education | 99 | 3.52 |
| Science, Technology, and Mathematics | 742 | 26.37 |
| Total | 2,814 | 100 |

| Doctorate | | |
|--------------------------------------|------------|------------|
| Arts and Languages | 41 | 8.07 |
| Behavioral and Social Sciences | 25 | 4.92 |
| Education Sciences | 279 | 54.92 |
| Others | 77 | 15.16 |
| Physical Education | 2 | .39 |
| Science, Technology, and Mathematics | 84 | 16.54 |
| Total | 508 | 100 |

Master's Program Offerings

In the master's level, the cluster with the most programs offered is in education sciences (e.g., MA in Educational Management, MA in Education major in Curriculum and Instruction). This is followed by programs under the science, technology, and mathematics cluster (e.g., MA in Science Education, MA in Mathematics Education) and under the arts and languages (e.g., MA in Education major in English, major in Music). On the other hand, very few programs are offered in the knowledge management cluster (e.g., MA in Library Science).

Doctorate Program Offerings

In the doctorate level, the cluster with the greatest number of programs offered is in education sciences (e.g., PhD in Educational Management, PhD in Curriculum and Instruction), followed by programs under the science, technology, and mathematics cluster. Meanwhile, the cluster with the least number of programs offered is in physical education (PhD in Physical Education). While there are programs offered in the knowledge management cluster in the master's level, there are no programs offered in the doctorate level.

One observation from the results depicted in Table 1 is that programs under the cluster of education sciences are the most dominant offerings in graduate teacher education in both master's and doctorate levels. One probable reason is the

assumption that advanced degrees in teacher education should focus more on the management aspect than on actual teaching of content. Indeed, the most popular graduate program in terms of enrolment is educational management. This result is consistent with the findings that educational management is in the top five of graduate program offerings in the master's level and top one in the doctorate level (Ofreneo, 2014a). This demand is also evident, albeit in a lesser extent, in educators who specialize in educational assessment and curriculum management. With the dominance of program offerings in graduate teacher education in both master's and doctorate levels in the education sciences cluster, how can this be maximized in providing better opportunities for research and development (R & D) projects? Addressing this question is important because it provides opportunities for teacher education institutions (TEIs) to examine the contribution of educational management programs in meeting the country's needs.

Another observation is the lack of sub-specialized program offerings in the doctorate level of the science, technology, and mathematics (STM) cluster in spite of this cluster having the most program offerings in the master's level. This disparity may be due to the number of sub-specializations in the master's level (e.g. MA in Science Education major in Biology) while programs in the doctorate level tend to be more general in scope or focus (i.e. PhD in Science Education). This disparity may be due to having doctorate programs in pure disciplines which are offered by HEIs (e.g. PhD in Mathematics as opposed to PhD in Mathematics Education). Nonetheless, do STM teachers who were trained in the undergraduate teacher education programs still need master's programs in teacher education or would they benefit more from master's programs in pure disciplines? Should our basic education teachers and higher education faculty who have master's degrees in graduate teacher education programs within the STM cluster go for

doctorate degrees in graduate teacher education or in the pure disciplines? What is more needed in terms of the training of our teachers? These questions echo the need for the Philippine HEIs to re-examine their graduate teacher education program offerings. There also seems to be a need for CHED and HEIs to assess their faculty development plans for teacher education faculty that need advanced degrees.

Another observation is the dearth of program offerings in knowledge management. It is important that HEIs offer graduate programs in knowledge management, contrary to the popular misconception that knowledge management is simply all about managing libraries. The creation of information as a new form of capital necessitated the societal tendency towards digitization of knowledge work and the integration of technology in education (Sassen, 2018; Vuori et al., 2019). Graduate programs in knowledge management are also necessary to ensure the maximum utilization of digitized knowledge (e.g. databases) towards big data analysis. The challenge in big data analysis is to unearth the pathways or patterns in the data (Wolfe, 2013), which can catalyze research inquiries or creation of products and services for education entrepreneurship in all academic disciplines.

This behoves HEIs to undertake an important critical inquiry, and that is to interrogate why some forms of knowledge tend to specialize while some become more varied and diversified (Young & Muller, 2010). Other significant questions that HEIs must ask among themselves is what is its “distinctive knowledge project” (Green, 2010, p.56), and how does “knowledge selection and transformation, and the dynamics of disciplinary and professional communities” affect the innovative tendencies of academic disciplines (Hordern, 2016, p.367). Such critical examinations are catalytic to a more informed graduate program planning that is strongly geared towards innovation and R & D.

Graduate Teacher Education Programs' Level of Accreditation

The frequency of accredited graduate teacher education programs by different accreditation bodies and their level of accreditation are shown in Table 2 and Table 3. For the master's level, the accreditation body with the greatest number of accredited programs is the AACUP (Accrediting Agency of Chartered Colleges and Universities in the Philippines), while ACSCU-AAI (Association of Christian Schools, Colleges and Universities Accrediting Agency, Inc.) has the least number of accredited programs (Table 2). For the doctorate level, most programs are likewise accredited by AACUP, while both ACSCU-AAI and PAASCU (Philippine Accrediting Association of Schools, Colleges, and Universities) have the least number of accredited programs (Table 3).

Table 2.
Accredited Programs in the Master's Level.

| Program Cluster | Candidate Status | | Level I | | Level II | | Level III | | Level IV | | Grand Total |
|--------------------------------------|------------------|--------------|------------|--------------|------------|--------------|------------|--------------|-----------|-------------|-------------|
| | f | % | f | % | f | % | f | % | f | % | |
| AACUP | 70 | 12.99 | 153 | 28.38 | 161 | 29.87 | 135 | 25.05 | 20 | 3.71 | 539 |
| Arts and Languages | 7 | 7.78 | 31 | 34.44 | 23 | 25.55 | 23 | 25.55 | 6 | 6.67 | 90 |
| Behavioral and Social Sciences | 5 | 9.80 | 11 | 21.57 | 20 | 39.21 | 13 | 25.49 | 2 | 3.92 | 51 |
| Education Sciences | 19 | 14.84 | 44 | 34.37 | 39 | 30.47 | 20 | 15.62 | 6 | 4.69 | 128 |
| Knowledge Management | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100 | 0 | 0 | 1 |
| Physical Education | 3 | 13.04 | 8 | 34.78 | 7 | 30.43 | 3 | 13.04 | 2 | 8.70 | 23 |
| Science, Technology, and Mathematics | 33 | 15.71 | 52 | 24.76 | 66 | 31.43 | 57 | 27.14 | 2 | .95 | 210 |
| Specialization Not Specified | 3 | 8.33 | 7 | 19.44 | 6 | 16.67 | 18 | 50.00 | 2 | 5.56 | 36 |

| | | | | | | | | | | | |
|---|-----------|--------------|------------|--------------|------------|--------------|------------|--------------|-----------|-------------|------------|
| ACSCU-AAI (Specialization Not Specified) | 2 | 8.69 | 5 | 21.74 | 10 | 43.48 | 4 | 17.39 | 2 | 8.69 | 23 |
| PAASCU | 7 | 23.33 | 4 | 13.33 | 15 | 50.00 | 4 | 13.33 | 0 | 0 | 30 |
| Arts and Languages | 0 | 0 | 0 | 0 | 1 | 100 | 0 | 0 | 0 | 0 | 1 |
| Behavioral and Social Sciences | 0 | 0 | 0 | 0 | 3 | 100 | 0 | 0 | 0 | 0 | 3 |
| Education Sciences | 1 | 16.67 | 1 | 16.67 | 4 | 66.67 | 0 | 0 | 0 | 0 | 6 |
| Science, Technology, & Mathematics | 0 | 0 | 0 | 0 | 2 | 100 | 0 | 0 | 0 | 0 | 2 |
| Specialization Not Specified | 6 | 33.33 | 3 | 16.67 | 5 | 27.78 | 4 | 22.22 | 0 | 0 | 18 |
| PACUCOA | 16 | 24.61 | 13 | 20.00 | 22 | 33.85 | 13 | 20.00 | 1 | 1.54 | 65 |
| Behavioral and Social Sciences | 0 | 0 | 0 | 0 | 2 | 100 | 0 | 0 | 0 | 0 | 2 |
| Education Sciences | 1 | 50.00 | 0 | 0 | 1 | 50.00 | 0 | 0 | 0 | 0 | 2 |
| Specialization Not Specified | 15 | 24.59 | 13 | 21.31 | 19 | 31.15 | 13 | 21.31 | 1 | 1.64 | 61 |
| Grand Total | 95 | 14.46 | 175 | 26.64 | 208 | 31.66 | 156 | 23.74 | 23 | 3.50 | 657 |

Master's Programs Accreditation Level

In the master's level, AACCCUP has the greatest number of accredited programs. Most programs accredited by AACCCUP are in the Education Sciences cluster. For ACSCU-AAI, PAASCU, and PACUCOA, however, available data did not specify the specialization of most programs. The institution with the greatest number of accredited graduate teacher education programs for the master's level at the time of the study is a state university in Cebu, with 21 accredited programs.

Table 3.
Accredited Programs in the Doctorate Level.

| Program Cluster | Candidate Status | | Level I | | Level II | | Level III | | Level IV | | Grand Total |
|--|------------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|----------|--------------|-------------|
| | f | % | f | % | f | % | f | % | f | % | |
| AACUP | 26 | 21.31 | 36 | 29.51 | 26 | 21.31 | 27 | 22.13 | 7 | 5.74 | 122 |
| Arts and Languages | 3 | 30.00 | 2 | 20.00 | 2 | 20.00 | 1 | 10.00 | 2 | 20.00 | 10 |
| Behavioral and Social Sciences | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 50.00 | 1 | 50.00 | 2 |
| Education Sciences | 10 | 15.38 | 22 | 33.85 | 17 | 26.15 | 13 | 20.00 | 3 | 4.62 | 65 |
| Science, Technology, and Mathematics | 4 | 23.53 | 8 | 47.06 | 3 | 17.65 | 2 | 11.76 | 0 | 0 | 17 |
| Specialization Not Specified | 9 | 32.14 | 4 | 14.29 | 4 | 14.29 | 10 | 35.71 | 1 | 3.57 | 28 |
| ACSCU-AAI (Specialization Not Specified) | 1 | 8.33 | 2 | 16.67 | 4 | 33.33 | 3 | 25.00 | 2 | 16.67 | 12 |
| PAASCU | 3 | 25.00 | 3 | 25.00 | 2 | 16.67 | 4 | 33.33 | 0 | 0 | 12 |
| Behavioral and Social Sciences | 0 | 0 | 1 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Education Sciences | 1 | 16.67 | 1 | 16.67 | 1 | 16.67 | 3 | 50.00 | 0 | 0 | 6 |
| Specialization Not Specified | 2 | 40.00 | 1 | 20.00 | 1 | 20.00 | 1 | 20.00 | 0 | 0 | 5 |
| PACUCOA | 10 | 35.71 | 11 | 39.29 | 6 | 21.43 | 1 | 3.57 | 0 | 0 | 28 |
| Education Sciences | 3 | 50.00 | 0 | 0 | 2 | 33.33 | 1 | 16.67 | 0 | 0 | 6 |
| Science, Technology, and Mathematics | 0 | 0 | 1 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Specialization Not Specified | 7 | 33.33 | 10 | 47.62 | 4 | 19.05 | 0 | 0 | 0 | 0 | 21 |
| Grand Total | 40 | 22.99 | 52 | 29.88 | 38 | 21.84 | 35 | 20.11 | 9 | 5.17 | 174 |

Doctorate Programs Accreditation Level

In the doctorate level, AACUP also has accredited the greatest number of programs. Education Sciences cluster has the greatest number of accredited programs by AACUP

and PAASCU, while for ACSCU-AAI and PACUCOA, the data also did not specify the specialization of most accredited programs. The institution with the greatest number of accredited graduate teacher education programs for the doctorate level at the time of the study is a state university in Negros Oriental, with 7 accredited programs.

An important observation from the results presented in Table 2 and Table 3 pertains to the outcome that more master's programs are accredited than doctorate programs. While this may reflect the existence of a relatively large number of master's programs in relation to doctorate programs nationwide, this situation points towards the need to focus on striving for the accreditation of doctorate programs. This is because an accredited doctorate program can translate to better theory building in an academic discipline and educational practices. Thus, doctorate program accreditation is an imperative for Philippine HEIs to be at par with HEIs abroad. A related observation is that majority of the master's and doctorate programs are either in the candidate status or in lower level status (i.e. Level I and II). There is a need for HEIs to accelerate the evaluation of their programs through accreditation which is an important external quality assurance system. Do HEIs have their respective internal quality assurance system for their graduate programs? Would it be important for CHED or HEIs to have quality standards for graduate teacher education programs that may provide inputs for both internal and external quality assurance processes? These questions highlight the merit of accreditation and other quality assurance processes as mechanisms for the assessment of the quality of teacher education. Both internal and external quality assurance are considered to be important areas in quality assessment of graduate education programs (Ofreneo, 2014b). Research has also shown that quality assurance arrangements in teacher education are positively associated with teacher quality and student achievement (Ingvarson & Rowley, 2017).

Enrolees and Graduates in Graduate Teacher Education Programs

Enrolment and Graduation by Gender

Table 4 shows the number of students enrolled in graduate teacher education program by gender for school year 2016-2017. There are more students in the master's level than the doctorate level. In both levels, there are more female students. Likewise, more students graduated from master's level than from doctorate level. There are also more female graduates. This finding indicates that there are more females who are taking up graduate studies in teacher education, and thus, more females complete their graduate degree than males.

Table 4.
Number of Enrolees and Graduates in Graduate Teacher Education Programs by Gender (2016-2017).

| | Master's | f | % | Doctorate | f | % |
|------------------|-----------------|----------------|------------|------------------|---------------|------------|
| Enrolled | Male | 24,460 | 23.79 | Male | 4,373 | 33.44 |
| | Female | 78,335 | 76.21 | Female | 8,706 | 66.56 |
| | Total | 102,795 | 100 | Total | 13,079 | 100 |
| Graduates | Male | 3,158 | 25.37 | Male | 623 | 32.00 |
| | Female | 9,288 | 74.63 | Female | 1,324 | 68.00 |
| | Total | 12,446 | 100 | Total | 1,947 | 100 |

One observation from the results displayed in Table 4 is that there are more female student enrolees and graduates of graduate teacher education programs, possibly because the society views teacher education as a career or profession for women. Such view can be attributed to gender stereotypes and/or gender biases socialized or socially constructed into children as they grew up (Meyer, 2010). It seems that the female-dominance in the number of students and graduates of teacher education in the undergraduate level is also evident

in the graduate level. One of the goals in the 17 Sustainable Development Goals is Goal number 5 - gender equality (SDG Knowledge Hub), which implies that both men and women must be equitably represented in the teaching profession.

Table 5.
Number of Enrolees and Graduates of Graduate Teacher Education Programs in the Master's and Doctorate Levels (2016-2017).

| Program Cluster | Enrolled | | Graduate | |
|--------------------------------------|----------------|------------|---------------|------------|
| | f | % | f | % |
| Master's | | | | |
| Arts and Languages | 15443 | 15.02 | 1508 | 12.12 |
| Behavioral and Social Sciences | 5899 | 5.74 | 667 | 5.36 |
| Education Sciences | 57050 | 55.50 | 7371 | 59.22 |
| Knowledge Management | 190 | .18 | 16 | .13 |
| Others | 7526 | 7.32 | 1355 | 10.89 |
| Physical Education | 2045 | 2.00 | 152 | 1.22 |
| Science, Technology, and Mathematics | 14642 | 14.24 | 1377 | 11.06 |
| Total | 102,795 | 100 | 12,446 | 100 |
| Doctorate | | | | |
| Arts and Languages | 534 | 4.08 | 40 | 2.05 |
| Behavioral and Social Sciences | 264 | 2.02 | 20 | 1.03 |
| Education Sciences | 9139 | 69.88 | 1469 | 75.45 |
| Others | 1868 | 14.28 | 309 | 15.87 |
| Physical Education | 61 | .47 | 8 | .41 |
| Science, Technology, and Mathematics | 1213 | 9.27 | 101 | 5.19 |
| Total | 13,079 | 100 | 1,947 | 100 |

Enrolment in Master's and Doctorate Programs

Based on enrolment data for SY 20116–2017 (Table 5), the clusters of master's programs with the greatest number of enrolees are education sciences, arts and languages, and science, technology, and mathematics. The cluster with the least number of enrolees in the master's level is knowledge management. On the other hand, the clusters of doctorate programs with the most enrolees are education sciences, other programs, and science, technology, and mathematics. The cluster with the least number of enrolees in the doctorate level is physical education.

Graduation from Master's and Doctorate Programs

As presented in Table 5, the data on graduation is congruent with the data on enrolment. Based on graduation data for SY 2016–2017, the clusters of master's programs with the greatest number of graduates are education sciences, arts and languages, and science, technology, and mathematics. The cluster with the least number of graduates in the master's level is in knowledge management. On the other hand, the clusters of doctorate programs with the most graduates are education sciences, other programs, and science, technology, and mathematics. The cluster with the least number of enrolees in the doctorate level is physical education.

Of peculiar interest from the results shown in Table 5 is the low number of enrolees and graduates in the doctorate program for physical education (PE). It seems that the potential for research and product development in PE is relatively untapped. A student who graduates with a doctorate degree in PE can collaborate with specialists in other disciplines that will lead to the creation of innovative products such as developing new or innovative gym equipment with engineers. Also, a doctorate in PE graduate can co-conceptualize unique pedagogical techniques with

teachers in other disciplines by utilizing sports as pedagogical tool (e.g. explaining angles in geometry using billiards). Such research and product development potential can also result to transdisciplinarity which occur when an academic discipline attains new ontological and epistemological nuances through long term research that makes it or transforms it into a totally new academic discipline (Frodeman et al., 2017; Moulaert et al., 2014; Pohl, 2010).

Another observation is the significantly lower number of students and graduates in the doctorate level compared to those in the master's level. While this is also the trend in other graduate education programs outside of teacher education, the wide gap is still alarming as this could be one reason for the country's limited productivity in both theoretical research and R & D. This is compounded by the widely acknowledged lack of high-quality educational research in general, and in teacher education more specifically (Tatto et al., 2016). Cross-cultural studies revealed that even comprehensive universities have problems in terms of maintaining the equanimity between teaching and research, with some universities more inclined to do research (Rostan, 2014; Teichler, 2014), while some are more geared towards teaching (Azman et al., 2014). Needless to say, the government through CHED and the DepEd must be able to design or identify more powerful strategies to promote graduate teacher education and support education professionals for their pursuit of doctorate education and to develop a stronger research culture among teachers.

Another observation is the large disparity in the number of enrollees and graduates in the graduate teacher education programs. While the number of graduates is better examined in terms of cohorts, the results indicating that the ratio for enrollees and graduates is approximately 10:1 for both master's and doctorate seems to depict wastage in graduate teacher education. HEIs must be able to strategically increase their graduates by adopting

evidence-based practice in facilitating the successful degree completion without sacrificing quality in thesis and dissertation research. HEIs, CHED, and other public and private agencies must be able to provide more scholarships to allow graduate students to study full-time. HEIs must also be able to design a plan to market more effectively graduate programs that have limited enrollees.

Conclusion and Recommendations

The aim of the study was to assess the status of graduate teacher education in Philippine HEIs. The study profiled graduate teacher education programs in terms of programs offered, accreditation level, enrolment data, and graduation data. The results provided information on the current status of graduate teacher education programs in Philippine HEIs which extended the findings in the study of Ofreneo (2014a) on the state of graduate education in the Philippines. The study is an important contribution to the research literature on teacher education in the country as previous research focused more on pre-service teacher education.

The key findings from the study are as follow: (1) programs under the cluster of education sciences are the most dominant program offerings in graduate teacher education in both master's and doctorate levels; (2) there is a lack of sub-specialized program offerings in the doctorate level of the STM cluster; (3) there is a dearth of program offerings in knowledge management; (4) more teacher education master's programs are accredited than teacher education doctorate programs; (5) there are more female student enrollees and graduates of graduate teacher education programs; (6) there is low number of enrollees and graduates in the doctorate program for Physical Education; (7) there is lower number of students and graduates in the doctorate level compared to those in the master's level; and (8) there is a large disparity

between the number of enrollees and number of graduates in the graduate teacher education programs. In general, the findings explicated the status of graduate teacher education programs in Philippine HEIs and add to our understanding of graduate teacher education in the country, including current trends and issues. The results can inform policy and practice in graduate teacher education in both national and institutional levels.

Based on the findings of the study, some insights on the status of graduate teacher education programs were acquired and are articulated in the following conclusions: (1) the graduate teacher education programs offered are diverse and provide multiple opportunities for teachers and other education specialists to pursue advancement in their profession; (2) the quality of many curricular programs is still in question given their lack of accreditation or low status of their accreditation levels; (3) the enrolment and graduation data of students in graduate teacher education programs paint a picture where program demand is not congruent with program success. The low percentage of graduates vis-a-vis the number of enrolment may have implications to financial viability of offering graduate teacher education programs; and (4) the low levels of accreditation, as well as the lack of focus or specialization on programs that have stronger and more direct contributions to R & D, are reflections of the larger issue of quality assurance in graduate teacher education.

Based from the conclusions, it is recommended that policies must be developed so that HEIs will be able to (a) give focus and promote graduate teacher education programs that have stronger and more direct contributions to innovation and R & D in various areas of specialization; (b) accelerate the accreditation of their graduate teacher education programs and to adopt internal quality mechanisms to assure the quality of their curricular programs; (c) adopt a system of managing graduate teacher education success based on accountability

in order to improve graduation rate while enhancing program quality; and (d) explore partnerships and collaborative strategies with other institutions to strengthen graduate teacher education programs. Moreover, it is recommended that curricular reforms on graduate teacher education should be designed with focus on enabling societal advancement through the programs' impact on teachers' pedagogical practice or scholarship of teaching, knowledge creation, and knowledge application.

The present study is not without limitations. First, the assessment of the status of the graduate teacher education programs was limited in assessing HEIs program offerings, accreditation level, and enrolment and graduation data. Future research should assess graduate teacher education in terms of the core functions of HEIs like curriculum and instruction, research, and extension. The study was also limited in terms of analysing data from CHED databases. Future research should inquire on the status of graduate teacher education programs by conducting surveys on HEIs that offer graduate teacher education programs, or by examining status and practices of selected TEIs. In spite of these limitations, the present study yielded important information that provide a basic but critical picture of the status of graduate teacher education in the Philippines.

Our understanding of graduate teacher education in the country will be further extended by continuing research on this area. An in-depth investigation of graduate teacher education will lead to the advancement of the quality of the country's social capital (Kruger, 2014). For instance, identifying quality practices of selected HEIs to provide a model for other HEIs in designing and managing their graduate teacher education programs seem to be an important line of inquiry for future research. Research on how different indicators of university rankings could be applied to the contexts of graduate teacher education may also be

conducted. Future research that will lead to the development of quality standards for graduate teacher education may also be important. The present study ends with the view that there is a need for quality standards specific to graduate teacher education programs so that HEIs will be guided in their processes and procedures in the design and implementation of these programs. The maintenance of such quality standards will have advantageous ripple effects in larger society.



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