

Enhancing research support to improve scholarly performance of state university graduate students

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Abstract

It is important to establish a culture of research in the graduate school of state universities to stay relevant and competitive in the knowledge-based economy. This paper attempted to enhance the graduate school research support for the improvement of the scholarly performance of graduate students in a state university. The mixed-methods sequential explanatory design was used. An online survey was conducted using a researcher-made questionnaire developed through Google form and was participated by 106 respondents. Likewise, interviews were participated by 11 interviewees. Furthermore, some of the findings were triangulated using document analysis. Average and rank were used to analyze the survey data. Findings reveal that the scholarly performance of the graduate students “does not meet expectations at all”. However, the extent of institutional support of the graduate school “fully meets expectation”. The scholarly performances needing improvement were research presentation and publication which were attributed to the need to attune the informational, mentoring, administrative, and resource supports of the institution along with the national standards for graduate research. Hence, opportunities for improvements were identified on the enhancement of the graduate school research support which may help establish research and innovation culture that is comparable to the national and global standards.

Keywords: Graduate students, research and innovation, research support, scholarly performance

Introduction

The performance of the Philippines in the Global Innovation Index (GII) provides an objective perspective in identifying issues that need to be addressed locally. In the GII, the country ranked 6th among lower-middle-income economies in 2019 and 4th in 2020 and 2021 but 54th overall among 129 countries in 2019, 50th in 2020 among 131 countries, and 51st among 132

countries in 2021 (Cornell University, INSEAD & WIPO, 2019-2020; WIPO, 2021). However, the performance of the country in the human capital and research is weak at 86th given its ranking in the following sub-categories: Education, 114th, Tertiary Education – 47th, and Research and Development – 73rd (WIPO, 2020). More specifically, the country ranked 51st in the Quacquarelli Symonds World University Ranking. These performances summarize the country's strengths and weaknesses along with the indicators in the innovation index which may be addressed through a multidisciplinary approach. Hence, the imperative to look into the institutional and policy interventions enacted to improve the human and innovation index in the country.

Policy and regulatory policies were enacted to improve the research and development capacities of organizations including higher education institutions to be able to contribute positively to the national and global aims of the country. Republic Act No. 11088 known as the "Philippine Innovation Act" was enacted in 2019 to promote the inclusive development, growth, and national competitiveness of micro, small and medium enterprises. Likewise, filipinovation as a whole-of-government approach to inclusive innovation was adopted as the country's national innovation strategy (De la Peña, 2020). Likewise, regulatory policies in the higher education sector are already in place to be able to contribute to the overall innovation performance. Recently, in the higher education sector, the Commission on Higher Education (CHED) through CHED Memorandum Order No. 15, series of 2019 introduced the research frameworks for graduate programs to improve the scholarly growth of students, faculty, and institutions that are comparable to global standards. Hence, the need to also look into the performances of graduate schools in higher institutions to be able to describe its research and innovation productivity.

Graduate schools of higher education institutions must play their roles in the effective implementation of the policies to achieve the shared vision and outcomes along with the establishment of a research and innovation culture. Research culture is evidence-based, dynamic, and distinct to the academic institution (Olvido, 2020), and a strong research climate and institutional support increase the number of scientific publications (Putri & Sofyandi, 2019) because institutional factors have a significant relationship with the graduate student's research performances (Hadi & Muhammad, 2019). Institutional support is the perception of the extent to which the organization provides support and assistance when needed (Putri & Sofyandi, 2019). The institutional support extended by the higher education institutions are informational, mentoring, administrative, and resource (Jungnickel & Creswell, 1994). Research and innovation culture may be described and assessed in terms of the institutional support for research and innovation and the graduate student's scholarly performance in terms of research completion, presentation, publication, and participation in extension activities. Hence, the institutional support for graduate academic research along with the scholarly performance of the graduate students needs to be systematically studied.

In the case of a state college in the Province of Sorsogon created through Republic Act No. 7666, it accepted the challenge of becoming a major contributor in the knowledge-based global economy by enhancing its reputation as a research university through its conversion into a state university through Republic Act. No. 11088. However, it is ranked 215th out of 223 (TFE Times, 2021) and 207th out of 228 (TheSummitExpress, 2021) best universities in the Philippines but was not listed in the Quacquarelli Symonds (QS) and Times Higher Education (THE) world university rankings. Along with the challenges for research and innovation, the advanced education program of the state university is mandated to engage in research in terms of basic and applied scientific investigative, policy, and social science research or producing technologies for commercialization, livelihood improvement, or research-based extension programs. Given this mandate, the graduate school faculty in collaboration with graduate students along with the institutional support of the university may

take the lead in advancing the case of the research university. Hence, the need to assess the scholarly performance of the graduate students and the graduate school research support provided by the state university to be able to achieve a systemic change aimed at establishing a sustainable research and innovation culture in the graduate school of the university.

Conceptual framework

The only true competitive advantage for a higher education institution in the Philippines is the establishment and enhancement of a sustainable research culture. (Quitoras & Abuso, 2021). This wisdom applies to the researchers and scholars of research universities whose productivity are measured in terms of research outputs in the form of publication, product, patent/copyright, people's services, places/partnership, and policies. Hence, the theory of faculty scholarly performance by Jungnickel and Creswell (1994) that portrays the relationship of the factors which have influenced the faculty scholarly performance was adapted for this study to describe the scholarly performance of the graduate students and the research support of the graduate school of a state university.

In this study, their framework was adapted to define the scholarly performance of the graduate students and research support of the graduate school of a state university. However, only the variable and indicators relevant in the context of graduate research were selected for the study. Hence, the four dimensions of scholarly performance as the dependent variable are research presentation, research publication, research paper completion including thesis or dissertation, and participation in extension projects. Likewise, the four dimensions of research support as the independent variable that may explain the variation in scholarly performance of the graduate students are informational, mentoring, administrative, and resource support. These variables including their relationship are summarized in Figure 1 which became the basis for the recommendations provided to enhance the graduate school policy on research support which may help improve the scholarly performance of the graduate students.

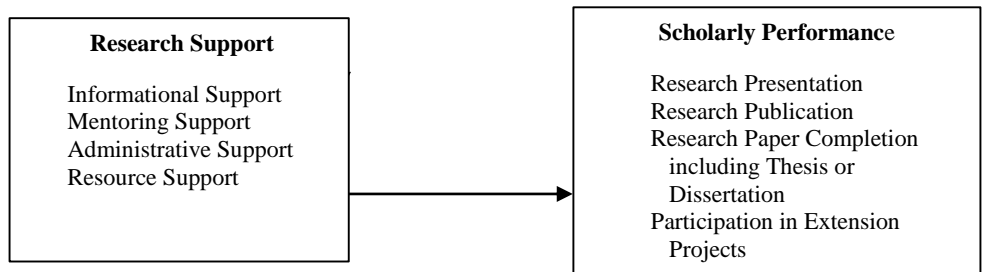


Figure 1. Conceptual Framework

Research objectives

This paper attempted to enhance the graduate school research support for the improvement of the scholarly performance of graduate students of a state university in the Province of Sorsogon. Specifically, this paper (1) assessed the scholarly performance of the graduate students in terms of (a) research presentation, (b) research publication, (c) research paper completion including thesis or dissertation, and (d) participation in extension projects; (2) described the university research support in the graduate school in terms of (a) informational support, (b) mentoring support, (c) administrative support, and (d) resource support; and (3)

identified opportunities for improvements to enhance the research support which may improve the scholarly performance of graduate students.

Methodology

Research design

The mixed-methods sequential explanatory design (Creswell & Plano Clark, 2018) consisting of two distinct phases namely quantitative followed by qualitative was used for this action research. In this design, the action research cycle of planning begins by first collecting and analyzing the survey data and follows up on specific results using document analyses and interviews to explain and elaborate on the survey results obtained in the first phase. The second qualitative phase builds on the first quantitative phase and the two phases are connected during the reflection on the identified opportunities for improvement to enhance the research support of the graduate school. The analysis of survey data provided an initial understanding of the research problem while the content analysis and interview provided in-depth and relevant insights on how to improve the scholarly performance of the graduate students.

Respondents of the study

Volunteer sampling (Creswell & Plano Clark, 2018; Murairwa, 2015) was used to determine the respondents which were invited through social media by providing a link to a survey. 106 graduate students participated in the survey. Majority of the respondents are female ($n = 106$, 70%) with 0 – 9 years in service ($n = 106$, 70%), and are master’s or doctoral students ($n = 106$, 85%). Furthermore, respondents who are 30 – 39 years old ($n = 106$, 40%) have the biggest number of respondents while 50 years old and above has the lowest number of respondents ($n = 106$, 6%). Likewise, 11 informants participated in the interview.

Research instrument

Researcher-made survey questionnaire and interview guide were developed using Google Form by adapting the appropriate variables and indicators for institutional support and scholarly performance from Jungnickel and Creswell (1994). The research instrument was first validated by two professors of a research university before the dry-run with five graduate students was conducted.

Table 1. Profile of the Respondents

Profile	Respondents	
	f	%
Gender:		
Male	36	34%
Female	70	66%
Total	106	100%
Age:		
29 below	36	34%
30– 39	43	40%
40 – 49	21	20%
50 and above	6	6%
Total	106	100%
Years in Service:		
0 – 9	74	70%
10 – 19	23	21%
20 – 29	9	8%
30 and above	1	0.9%
Total	106	100%
Academic Status		
Masteral/Doctoral Students	90	85%
Masteral/Doctoral Candidates	16	15%
Total	106	100%

Procedure

An online survey was conducted from May to August 2021. Respondents were invited by sending a link to the online questionnaire through email or messenger. The interview through messenger followed in November 2021 to solicit insights on the enhancement and improvement of the scholarly performance of graduate students. Informed consent was ensured along with the ethical guidelines of the institution by including in the instrument a section on the purpose of the study, guaranteeing confidentiality and anonymity of respondents, and providing the option to terminate participation, refuse to answer questions, and be informed of the study results among others.

Data analysis

The collected data from the online survey using Google form were exported to Microsoft Excel to determine the average and rank for the analysis of data. To fully understand the emerging model, document analysis was also conducted on the approved policies for graduation relative to publication and presentation. Furthermore, manual thematic analysis and NVivo were used to generate the word cloud from the transcript of the interview to determine the overall themes of the responses.

Findings and discussion

Scholarly performance of the graduate students

Table 2 reflects the average rating and ranking of the seven indicators for the scholarly performance of the graduate students. The scholarly performance of the graduate students on the extent of completed papers including thesis and dissertation, participation in extension program, and publication of non-research articles “does not fully meet expectation”. On the other hand, the extent of presentation of research and non-research papers, and publication of research articles in refereed journals and non-refereed journals “does not meet expectations at all”. In general, the scholarly performance of graduate students in terms of publication and presentation of research articles ranked at the bottom among the seven indicators. The overall average for the scholarly performance of the graduate students is 1.6 which means that it “does not meet expectations at all”. This scholarly performance in terms of publication, visibility, impact, productivity, and quality are influenced by the environmental condition, resource strategy, group management, leadership, and network management (Verbree et al., 2015). The graduate students may also include researching for key performance indicators, citation, H-index, and personal development as drivers in the completion of their graduate degrees (Kaur et al., 2020) to improve their research presentation and publication performances. However, this paper explored the opportunity of improving their scholarly performance through informational, mentoring, administrative, and resource support provided by the institution (Jungnickel & Creswell, 1994; Putri & Sofyandi, 2019).

Table 2. Scholarly Performance of Graduate Students

Count	Indicators	Ave.	Rank	Interpretation*
1	Presentation of research in national or international research forums.	1.3	5.5	Does not meet expectations at all
2	Presentation of non-research papers at national meetings and research forums.	1.3	5.5	Does not meet expectations at all
3	Publication of research articles in refereed journals.	1.3	5.5	Does not meet expectations at all
4	Publication of non-refereed research articles.	1.3	5.5	Does not meet expectations at all
5	Publication of non-research articles.	1.4	3	Does not meet expectations at all
6	Completion of research papers including thesis and dissertation.	1.9	1	Does not fully meet expectations
7	Participation in the extension program.	1.7	2	Does not fully meet expectations
	Average	1.6	-	Does not meet expectations at all

* 1 – (0) Does not meet expectations at all; 2 – (1) Does not fully meet expectations; 3 – (2) Fully meets expectations; 4 – (3 and above) Exceeds expectations

Institutional research support for graduate students

The four dimensions of institutional support are informational, mentoring, administrative, and resource (Jungnickel & Creswell, 1994). Mentoring (3.2) and administrative support (3.2) received the highest overall average rating followed by informational support (3.0) and resource support (2.8). These institutional supports as provided by the graduate school “fully meets the expectation” of the respondents.

Informational support

In terms of informational support as presented in Table 3, the highest average rating of 3.3 was on the support for communication opportunities to address the graduate students’ welfare. The lowest average rating of 2.2 was on the support for information for research collaborators. The thesis and dissertation are collaborative works between the graduate student and the adviser and the extent of support provided by the graduate school “does not fully meet the expectation” of the respondents. The Sorsogon State University (2021) Student Handbook provides the institutional policy on the assignment of thesis or dissertation adviser which allows for the regular university faculty and employees to serve as advisers of not more than five students at a given time provided, they meet the following qualifications: (a) doctorate or master’s degree holder with appropriate specialization; (b) has published research, and (c) has training on thesis/dissertation advising. Given this inclusive policy on the assignment of advisers, the desire for more research collaborators in the form of a thesis or dissertation advisers may be attributed to a class wherein the 13 master’s students were assigned to two advisers only. And the part-time faculty served as an adviser to the 10 candidates for graduation for AY 2019 – 2020. Overall, the part-time faculty was able to graduate a total of 11 master’s students during the said semester. Hence, the need to promote a more collaborative work culture involving more thesis and dissertation advisers for early career academics (Mydin, 2021).

Research as one of the core functions of higher education institutions necessitates the development of informational support for the management of higher educational institutions (Levina et al., 2016) or a web-based management information system for an academic degree and graduate education (Duan & Zhang, 2007). Informational support may be in the form of effective use of social media (Utz, 2016). For efficiency, the graduate school community may

adopt LinkedIn or Twitter because it provides higher informational benefits than Facebook as found by Utz (2016). Furthermore, university library services have evolved in response to national and global drivers by leveraging the information within, and capacity of, the institutional repository, the core of the institutional support services (Brown et al., 2018). Hence, university librarians as they transition into these new roles must develop new research skills (Brown et al., 2015) to be a critical enabler in improving the scholarly performance of the graduate students.

Table 3. Informational Support to Graduate Students

Dimension	Indicators	Average	Rank	Interpretation*
Informational Support	1. Provides feedback for failing in research expectations.	3.1	5.5	Fully meets expectation
	2. Provides sources for identifying new research ideas.	3.2	3	Fully meets expectation
	3. Provides communication opportunities to address graduate students' welfare.	3.3	1	Fully meets expectation
	4. Provides feedback about research performance.	3.2	3	Fully meets expectation
	5. Provides research funding information.	2.9	7	Fully meets expectation
	6. Provides for the public commendation of graduate students.	3.1	5.5	Fully meets expectation
	7. Provides appropriate research agenda and priorities for thesis or dissertation.	3.2	3	Fully meets expectation
	8. Provides information on the identification of research collaborators.	2.2	8	Does not fully meet expectation
	Average	3.0	-	Fully meets expectation

* 1 – Does not meet expectation at all; 2 – Does not fully meet expectation; 3 – Fully meets expectation; 4 – Exceeds expectation

Hence, the need to provide a practical and accessible platform for data and information sharing that may allow for the continual upgrading of the research competencies including the establishment of a research journal for the graduate school. The training on thesis and dissertation advising may be conducted annually with a different set of resources to enhance the graduate school research support of the graduate school every year to ensure the widest participation of all qualified trainees. This would eventually increase the pool of qualified research advisers to fully meet or exceed the expectation of graduate students. Furthermore, given that the research articles of the theses and dissertations sought publication from external reputable journals, the graduate school journal may publish the extended abstract of the theses or dissertations and theses research notes of the graduate school students and faculty. The goal is to ensure that the links to their publications are shared to the readers of the journal for the widest dissemination and possible citations of the relevant research manuscripts.

Mentoring support

Table 4 reflects the mentoring support provided to the graduate students. The highest average rating of 3.3 was on the provision of assistance in the development of new research skills. And, the lowest average rating of 3.0 was on the provision of respect for the scholarly works and assistance for research including thesis and dissertation grant writing. Evidence-based mentorship as practiced by a national training hub for mentors and mentees emphasizing the benefits and challenges of diversity, inclusivity, and culture in mentoring relationships was effective at improving early-stage researchers' productivity (Sorkness et al., 2017). This innovation may prompt the graduate school to develop a database for theses and dissertations

that will form part of the informational support of the institution to researchers. The position of graduate program directors, whose title for this position varies across universities is key in the administration of graduate programs have a wide range of responsibilities but limited resources are provided to assist them in this role (Wiener & Peterson, (2019).

According to Ismail et al. (2021), reliability and empathy were the two dimensions that had a significant relationship with students' satisfaction with academic advising services. As described in CMO 15, s. 2019, theses and dissertations are supposed to be independent works of the graduate students. Furthermore, respect is duly accorded to both parties by virtue of BOT Resolution No. 9, s. 2019 which mandates that thesis and dissertation advisers shall serve as co-authors of the students. However, some graduate students opted to publish their thesis as a single author which does not conform to this policy. Given that these exceptions to institutionally approved policy do happen, the graduate school may review the policy for possible amendment or revision or may choose to enforce it to the letter. Furthermore, the mentoring dimension can be a relevant research agenda that may be explored further for the benefit of both the graduate students and faculty given that the highest number of citations along with early-career faculties for both WOS and SCOPUS databases from 1993 to 2017 with 73 citations according to Yusop et al. (2020) is about mentoring for new faculty and graduate teaching assistants.

Table 4. Mentoring Support to Graduate Students

Dimension	Indicators	Average	Rank	Interpretation*
Mentoring Support	1. Provides assistance for the review of the manuscript.	3.1	5	Fully meets expectation
	2. Provides assistance in developing new research skills.	3.3	1	Fully meets expectation
	3. Provides necessary research expectations for the graduate students.	3.2	2.5	Fully meets expectation
	4. Provides research time to graduate students to come up with scholarly research works.	3.1	5	Fully meets expectation
	5. Provides respect for the scholarly work of graduate students.	3.0	7.5	Fully meets expectation
	6. Provides assistance for research including thesis and dissertation grant writing.	3.0	7.5	Fully meets expectation
	7. Provides assistance for collaborative research	3.1	5	Fully meets expectation
	8. Provides enough pressure to publish completed research.	3.2	2.5	Fully meets expectation
	Average	3.2	-	Fully meets expectation

* 1 – Does not meet expectations at all; 2 – Does not fully meet expectations; 3 – Fully meets expectation; 4 – Exceeds expectation

Given these findings, it may be necessary to implement a thesis and dissertation clinic annually to be participated by all graduate students regardless of academic status. Mandatory modules on (a) research ethics, (b) research proposal preparation, (c) research presentation, and (d) research publication should be attended prior to the thesis and dissertation by the graduate students. Likewise, the graduate school may amend the graduation requirement for each program to align the graduate program curriculums to the minimum requirement provided by CHED, especially on the graduation requirement. These

recommendations are forwarded because, in spite of meeting the respondents' expectations, the scholarly performance of the graduate students can only be as good as the institutionally approved policies that meet or exceed the national, international, or global standards.

Administrative support

Table 5 shows that the highest average rating of 3.3 was on the personnel encouragement for the scholarly endeavors while the lowest average rating of 3.0 was on personnel support for the research skills development program. The extent of personnel support for the research skills development programs may be provided through seminars and workshops, especially along with research presentations and publications.

The Sorsogon State University (2021) Student Handbook provides the legal bases along with research presentation and publication of graduate students as a requirement for graduation, among others: (a) BOT Resolution No. 25, series of 2016: a student shall be awarded a master's degree upon submission of proofs of application and notice of acceptance from any reputable or CHED refereed journals (p.36); (b) BOT Resolution No. 15, series of 2017: (a) Doctor of Philosophy in Language Education – publication in a refereed journal (p.16), (b) Doctor of Education in Educational Leadership and Management – presentation of the research study in international fora or publication of the research study in a refereed journal (p.17), and (3) Doctor of Education in Filipino – presentation or publication of dissertation paper (international or national (p.20); and (c) BOT Resolution. No. 26, series of 2016: Doctor of Philosophy in Mathematics Education and Doctor in Public Administration - presentation of the research study in international fora or publication of the research study in a refereed journal (pp.18-19). Furthermore, BOT Resolution No. 9, series of 2019: A graduate student may apply for publication preferably in CHED recognized journal, his/her thesis/dissertation or portion/part thereof any time after pre-oral defense with consent from the panel of examiners. The adviser should work hand in hand with the candidate in writing the thesis/dissertation in publishable format with/without the assistance of the technical/language editor and Any of the following or a combination thereof shall be required for graduation in refereed journals. Notice of acceptance, certification from the editorial board, or e-mail of the decision/result of the review/refereeing (p.2), among others. In the same year, CMO No. 15 series of 2019 which provides the following major requirement for graduation for the following programs: (a) Master of Arts (Academic Track) – at least one publication in a refereed journal or juried creative work; (b) Master's Degree (Professional Track) – Capstone Project; (c) Doctor of Philosophy (PhD) Academic Track – publicly defended dissertation (theory-building) and publication in an internationally/nationally indexed journal or juried creative work outlet; (d) Doctoral Degree (Professional Track) – publicly defended practice-based dissertation and practice-based research. Given the minimum standard provided in CMO No. 19, series of 2019 for all graduate programs in private and public higher education institutions under CHed's supervision, the requirement provided by BOT Resolution No. 9, series of 2019 may be reviewed for amendments or revisions. It seems that the requirement for master courses provided in BOT Resolution No. 25, series of 2016 and BOT Resolution No. 15, series of 2017 is in consonance with the minimum requirement provided by CHED.

Table 5. Administrative Support to Graduate Students

Dimension	Indicators	Average	Rank	Interpretation
Administrative Support	1. Provides personnel support for the research skills development program	3.0	6	Fully meets expectation
	2. Provides support for thesis or dissertation panels and advisers.	3.2	3	Fully meets expectation
	3. Provides support for research respondents or collaborators	3.2	3	Fully meets expectation
	4. Provides personnel support for thesis and dissertation writing	3.1	5	Fully meets expectation
	5. Provides flexibility of academic load during graduate education vis-a-vis the required research outputs.	3.2	3	Fully meets expectation
	6. Provides personnel encouragement for the scholarly endeavors of graduate students.	3.3	1	Fully meets expectation
	Average	3.2	-	Fully meets expectation

** 1 – Does not meet expectations at all; 2 – Does not fully meet expectation; 3 – Fully meets expectation; 4 – Exceeds expectation*

Given these standards and guidelines, a calibrated progression in research works to begin from secondary research during course work to primary research during thesis or dissertation may be implemented. The course descriptions of the various graduate courses require the completion of research work every semester. In most cases, original research was prepared and submitted by the students. A calibrated progression for research requirements may be introduced by starting with a review article, meta-analysis, or book review during course work that may be aligned to their target original research article that may be prepared for their thesis or dissertation. This road map may conclude with the publication of an original research article that is able to contribute new knowledge along with their chosen fields. Hence, amendments to the existing graduate admission policies and course descriptions of various graduate education curriculums are necessary to implement a developmental process for academic researchers.

Resource support

The resource support of the graduate school as shown in Table 6 shows that the provision of funding support for the publication of completed research ranked first followed by support for research equipment, facilities space, and attendance to professional training. However, provision of support for start-up funds and student research funds ranked 4th and 5th respectively. These findings reveal that the graduate students are aware of the institutional policy of the university which grants research incentives to published research of graduate students and faculty. Likewise, the provision for start-up funds and student research funds is the lowest because thesis and dissertation projects are normally self-funded by the graduate students and start-up funds are provided as capital for innovative ideas for actual businesses which are normally beyond the scope of thesis and dissertation projects. However, there are external opportunities in which if they are properly informed may voluntarily choose to avail themselves. Improved resource support may be implemented by increasing the number of scholarships, improving the mobility of researchers, and strengthening the infrastructure to enable the university to succeed in the knowledge-based economy (Acosta & Celis, 2014).

Table 6. Resource Support to Graduate Students

Dimension	Indicators	Average	Rank	Interpretation*
Resource Support	1. Provides for start-up funds.	2.8	4	Fully meets expectation
	2. Provides support for research equipment and facilities space.	3.1	2.5	Fully meets expectation
	3. Provides support for attendance at professional training.	3.1	2.5	Fully meets expectation
	4. Provides funding support for the publication of completed research.	3.2	1	Fully meets expectation
	5. Provides for student research funds.	2.7	5	Fully meets expectation
	Average	3.0	-	Fully meets expectation

* 1 – Does not meet expectation at all; 2 – Does not fully meet expectation; 3 – Fully meets expectation; 4 – Exceeds expectation

Given the aforementioned observations, it may be necessary to propose amendments for the regular implementation of the policy for best theses and dissertation awards. The mechanics for theses and dissertations may apply for research grants along with the approved research funds allotted for students' research funds. Amendments to the existing policy may include the provision of incentives for best theses and dissertations awardees. To address the seeming lack of provisions for student research funds in the graduate school, CMO No. 20, s. 2011 allows the graduate school to allocate 12.5% of the 50% from the actual tuition fee for student development which may be used for scholarship and incentive programs to uplift and motivate graduate student researchers. However, to be able to enjoy this privilege a proposal for the program may be designed stipulating therein the conditions and regulations to be able to avail of the student research funds during the thesis or dissertation. These research funds may be availed in the form of research equipment, use of laboratory, in-house training on research, the incentive for best theses or dissertation encompassing their compliance of publication and/or presentation requirement for graduation, and the likes. However, these proposals should hurdle the scrutiny of the Administrative Council and the Board of Regents, if and when the University President will calendar it for approval of the governing board of the university.

scholarly performances needing improvement are research presentation and publication which are systemically attributed along with the need to attune the informational, mentoring, administrative, and resource supports of the institution for graduate research and innovation. Hence, opportunities for improvements were identified on the enhancement of the graduate school to improve the scholarly performance of the graduate students in terms of the completion and dissemination of research outputs. The aim is to establish a research and innovation culture in the graduate school that is responsive locally and comparable to the national and global standards:

Given the action research nature of the study, the findings, conclusions, and recommendations presented are context-specific and cannot be generalized outside of the locale of the study. However, ex-ante evaluation on the policies which may be formulated that are aligned with the recommendations forwarded in this paper may be conducted for future research.

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