Research Knowledge Transfer in the Nursing Education Colleges of two Selected State Universities in Luzon (Philippines)

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Abstract:This study sought to examine the research knowledge transfer at two conveniently sampled state universities located north and south of the National Capital Region through the Knowledge Transfer Theory. After conducting a five-part online survey distributed through Google Forms to a total of 39 volunteer respondents from nursing programs (33 from School A and six from School B), the data revealed that knowledge transfer in both schools suffered attrition from knowledge of research to leading a research team and that self-reported knowledge of research must be further qualified. It is recommended that the ontology of research transferred in nursing programs must also be re-examined to advance research knowledge that leads to greater action within and outside state universities.

Keywords: Research, Research Knowledge, Knowledge Transfer, State Universities and Colleges, Nursing Education Research

I. Introduction

Globally, knowledge was recognized for its significant role in nations' development, specifically in promoting economic growth (Zaman, Khan, Ahmad, & Aamir, 2018). Education plays a crucial role in stimulating economic growth through quality education (Guiamalon, 2022). State universities and colleges (SUCs) in the Philippines make education possible for all through the "Universal Access to Quality Education Act," which exempts students from tuition and other school fees (Republic Act No. 10931). This initiative helps students in the Philippines attain quality education without financial burden. As institutions of higher learning, SUCs are committed to fostering quality education through their four-fold mission: instruction, research, community extension, and production. Each SUC is mandated to research because this produces knowledge crucial to community extension activities (Medina, 2019) and development. Further, SUCs develop critical thinking in students and facilitate change in society, added Guiamalon. However, critical thinking will not be achieved without any engagement in research and scholarly activities (Wallman& Hoover, 2012).

The Commission on Higher Education (CHED) of the Philippines released Memorandum Order No. 15 last year regarding the policies, standards, and guidelines for graduate programs. Because graduate students must meet the requirements set by globalization, regional integration, and internalization of higher education (Sombatsompop et al., 2011), they are now required to use their 21st-century skills both in their work and profession to support the nation's innovation, research, and development. The CHED underscored the vital role of graduate programs to facilitate the development of higher competencies beyond the targets of basic education and baccalaureate education in research, dissemination of research findings, transfer of research skills, and the use and application of new knowledge.

Consequently, the CHED mandated graduate students in any program in the country to show evidence of publication before graduation. This requires SUCs to enable their graduate students to write for publication, not only to push for more publications but also for better instruction in research through the teaching of graduate students employed in them. This will inevitably accelerate research productivity and capacity-building, and improve research quality in all higher education institutions eventually, including those in local HEIs (Bantugan, Anonuevo, &Maligaya, 2022). According to Medina (2019), SUCs are expected to conduct research and extension services; hence, research programs must contribute to improving their research services and increasing accredited programs (Galleto, 2016).

Lack of time was mentioned as the main reason why authors do not publish (Scherer, Gil, Schmucker, and Meerpohl, 2015). In a study conducted by Torres et al. (2017), it was indicated that nursing instructors are knowledgeable and skilled in conducting research. However, due to the demands of their teaching load, research undertakings are not prioritized. A study in a state university in Central Luzon in the Philippines (Rogayan&Corpuz, 2022) pointed out that the main weakness in journal publication is not publishing in refereed international journals but in Scopus-indexed journals and those accredited by CHED. Thus, for SUCs whose faculty members are already publishing, the problem was not publishing in journals preferred by the CHED. For local public colleges in the National Capital Region (NCR) still finding their way towards research productivity, publishing, regardless of the characteristics of the journal, remains unattainable despite the assistance of national government units (Bantugan, Anonuevo, &Maligaya, 2022). In Mindanao, leadership can help compensate for inadequacies in other areas (Mantikayan&Abdugani, 2018).

The Philippines is a well-known supplier of competitive bedside nurses all over the world (Ladrido, 2020). However, its performance in nursing research through Filipino nurse researchers has yet to become as well-known. To bridge this gap, universities offering nursing programs must advance the training of present and future nurses in nursing research. State universities are particularly burdened with teaching Filipino nursing students nursing research practice to serve marginalized communities in the country because they are funded by the government. Nurse researchers are considered to "play a critical role in providing the information necessary to improve health outcomes because of their unique combination of research skills and their clinical expertise" (National Institute of Nursing Research, 2018, para. 1).

Problem Areas in Research in Higher Education

Globally, researchers with technical views of research delivered modest research engagement despite the availability of funds (Borg &Alshumaimeri, 2012). Constraints and resistance against the upgrading of the research culture occur when the management and monitoring systems are lacking (Henry, Ghani, Hamid, & Bakar, 2020). Constraints in time and institutional support hinder the sustainability of research projects (Sakarkaya&Bümen, 2022). Furthermore, the commercialization and corporatization of research led to more private than public good (Parker, 2022). These realities indicate that research productivity is a multidimensional phenomenon and that it takes more than just individual knowledge in research and the availability of resources to bring about desired institutional results.

Determinants of Research Productivity

In 1998, Dundar and Lewis revealed that research productivity depended on eight factors that were related to university ownership, program and department size, full professors, publishing faculty members, financial support, research-related expenditures and resources, graduate students-faculty ratio, and graduate students-research assistant ratio. Later, additional factors arose, namely: the number of doctoral students, faculty research confidence, and graduate assistant hours for faculty members (Kotrlik, Bartlett, Higgins, & Williams, 2002). In 2016, Verd, Davia, &Legazpe (2016) revealed that sex, age, desire for professional promotion, international collaboration, and publication contributed positively to research productivity in terms of academic publication. Overall, individual and institutional factors affect research productivity (Uwize et al., 2021; Mantikayan&Abdugani, 2018), as well as national variables (Henry, Hamid, and Khan, 2020). Hence, the multidimensionality of research productivity requires complex intervention.

Research and SUCs in the Philippines

Republic Act 8435 mandated SUCs to prioritize research and use its findings in formal education, extension, and development efforts. Galleto (2016) wrote that SUCs have responded to this in many ways to facilitate research productivity and deliver key result areas. Importance is given to the presence of a research center, regular faculty involvement in regular research activities, the presence of externally funded research, the publication of completed research, and the presentation of research-based papers and inventions. In terms of levels given to SUCs, Level 5 is the highest level comparable to the best universities and colleges in Asia, while Level 1 is for those that are in the early stages of development. This drives all SUC administrators to encourage their faculty to get involved in research to improve their profile and attain a higher SUC level (DBM-CHED-Joint-Circular-No.-1-2016).

Meanwhile, the Accrediting Agency of Chartered Colleges and Universities in the Philippines (AACCUP), Inc. (the main accrediting body for the curricular programs of SUCs), included research productivity as one of the 10 areas for evaluation during accreditation. The SUC leveling instrument measures the outcomes in Key Results Area 2 (research capability and output) in terms of (1) research centers, (2) externally-funded research, (3) completed research-based papers published in the past three years in Scopus, Web of Science (WoS), and CHED accredited journals, (4) research-based papers presented, (5) citations, and (6) inventions.

Nursing Research in the Philippines

Nursing research is committed to the development and advancement of nursing practice and policymaking to improve health outcomes (Calma, 2010). It is designed to develop knowledge on issues that pertain to nurses, nursing education, and nursing administration (Tingen, Burnett, Murchison, & Zhu, 2009). With this, nursing colleges established their research units to facilitate research endeavors in their school. Each faculty member is encouraged to actively involve themselves in research activities based on their research agenda. Faculty in state colleges and universities (SUCs) are obliged to do research alongside instruction and extension services. For those faculty members with an academic rank of 'instructor', 10 percent of their workload is allotted to research; for those with a 'professor' rank, it is 50%.

The reclassification of teachers in SUCs is based on National Budget Circular No. 461, whereby a faculty member must satisfy the points corresponding to the rank. The research productivity of the faculty is one of the key areas for evaluation. No research output means low rank or slow promotion. With this, every faculty member is moved to try his/her/their best to engage in research. Indeed, the saying "publish or perish" is true for faculty members, especially in SUCs. Thus, they are challenged to publish for their tenure and academic success. However, not all faculty can do research and publish articles because of factors that hinder involvement

in research and publication, such as limited time, lack of training, fear of rejection, lack of funds, lack of institutional support, etc. (Wa-Mbaleka, 2015).

Research in the Nursing Programs of SUCs

Globally, the Bachelor of Science in Nursing (BSN) programs educate nurses to be more appreciative and practice research in their professions (Northeastern State University, 2018). Research is now a vital part of 21st-century nursing education because it helps nurses improve their critical thinking skills as they perform their roles and responsibilities (University of Rhode Islands, 2020) in clinical and community-based settings. Currently, nursing research has expanded to include genomics and other related technologies (Wright, Higgins, Taylor, &Hersburg, 2019).

In the Philippines, the Professional Regulatory (PRC) Board of Nursing (BON) set the National Nursing Core Competency Standards, where research was included as one of the competencies to be developed by nurses. According to the 2012 National Nursing Core Competency Standards, nurses have the responsibility to participate in nursing and other health-related research to help improve the quality of patient care (Philippine Regulatory Commission, 2012). However, in one study in a college of nursing in Central Luzon, it was found that it is possible to only have five studies come out of five years (Lumanlan&Leynes, 2018), despite the multiple mandates.

Research Trajectories in the Nursing Academe

"More Complex, Coordinated, and Collaborative Research Methodology" (Walsh, Huang, & Felix, 2019, para. 3), "Applied Research with Social and Economic Impact" (para. 8), and "Technology-enabled Research and Scholarly Communication" (para. 14) reshaped university spaces, technology, support services, and staffing before the pandemic. During the pandemic, some research communities diverted their attention to online education, teacher education, theoretical models, social and economic Impact" (para. 8), and "Technology-enabled Research and Scholarly Communication" (para. 14) reshaped university spaces, technology, support services, and staffing before the pandemic.

During the pandemic, some research communities diverted their attention to online education, teacher education, theoretical models, scales, and interview forms (Karakose&Demirkol, 2021). In the field of nursing education, however, "(1) continuing education in nursing, (2) application and influence of the Internet in nursing education, (3) postgraduate nursing education, (4) undergraduate nursing education, and (5) clinical quality training" continue to influence research trends in that field (Yang, Wang, Yang, & Jiang 2021) despite the pandemic.

Action research and meta-synthesis remain valuable in that they can help fulfill the potential of publication for nursing higher education (Moch, Vandenbark, Pehler, & Stombaugh, 2021) and graduate students preparing for their nursing roles. In the nursing academy, many studies across the globe focused on COVID-19's impact on nursing students' mental health (Barette&Taycross, 2021; Aslan, 2021; Temiz, 2020); online learning experiences (Hu et al., 2022); performance; and satisfaction (Oducado&Estoque, 2021). Consequently, these overshadowed other equally important areas of concern (Bian and Lin, 2020). Hence, nursing researchers must be able to address both COVID-19 and non-COVID-19 areas to address both immediate and long-standing concerns that affect their practice.

Study Framework

This study was anchored on the Knowledge Transfer Theory of Argote and Ingram (2000), which defines organizational knowledge transfer as "the process through which one unit (e.g., group, department, or

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division) is affected by the experience of another" (p. 151). In this study, research knowledge transfer in a state university is defined as a process of research knowledge transfer affecting other units within the university that contributes the most to competitive advantage (Drucker, 1993; Stewart, 1997; Toffer, 1990). Hence, "a lasting competitive advantage is dependent on intellectual capital and not anymore on financial capital or physical assets" (Thomas &Prétat, 2009, p. 38) and could explain the performance of an institution in terms of internal and external knowledge transfer.

In a state university, external research knowledge transfer is reflected in the faculty member of one organization learning about research from another organization and transferring knowledge about research to another. That said, "Knowledge transfer in organizations manifests itself through changes in the knowledge or performance of the recipient unit" (p. 3). State universities must consider research knowledge transfer in their organization, including their nursing education colleges, to advance in the field of research.

II. Methodology

This quantitative study involved the use of a six-part, 58-item researcher-developed online survey administered through Google Forms (covering demographics, quantitative and qualitative research approaches, research methods, conceptual tools, and research skills) at two conveniently and purposively sampled nursing colleges at two state universities from the north and south Luzon areas. They were chosen since they both have nursing colleges and are located on the major island of Luzon. Thirty-three and six volunteer state university teachers (46% of the total from School A established in 1916 and 33% from School B established in 1903, respectively) from nursing education units were involved as respondents between November 28 and December 9, 2022. The data were analyzed via descriptive statistics, involving analysis across data sets. The results were interpreted vis-à-vis the Knowledge Transfer Theory of Argote and Ingram (2000).

III. Results

Areas of Knowledge Transfer to the Nursing Faculty of the Selected Schools

Quantitative Research Approaches. Overall, across quantitative and qualitative research approaches, both School A and School B revealed that most of the nursing faculty respondents know meta-analysis and data mining the least (School B) or are close to it (School A). This means that until knowledge on both topics improves, more than half of the faculty (School B), at most, will be able to use available information at the university for research purposes. Understandably, quasi-experiments ranked the highest in School A and testing ranked the same in School B, given the highly positivistic orientation of nursing programs in the country. However, given their weakness in meta-analysis(-synthesis), fulfilling their publication potential might become a challenge (Moch, Vandenbark, Pehler, & Stombaugh, 2021), given the wealth of literature in their field.

However, percentage-wise, school A had a higher level of self-reported knowledge of research approaches compared to school B, and those who knew data mining and meta-analysis the least in school A were still above 50 percent (refer to Table 1). This means that, because School A has a larger faculty and a greater number of people who are knowledgeable about data mining and meta-analysis, it is more likely to spread this knowledge throughout the organization in more ways (Thomas &Prétat, 2009).

Polling is ranked third-lowest in general. However, it is most concerning for School B because it is the lowest there. Given the social science orientation of the nursing profession and the positivist orientation of health research in general, polling is most helpful in bridging the two. In the case of School B, bridging the two in the practice of research might pose challenges. Overall, testing is ranked highest, but testing cannot do everything. The other approaches are equally important in the field of social science research, where not all variables can be controlled and counted. Aside from action research and meta-analysis(-synthesis) (Moch,

Vandenbark, Pehler, & Stombaugh, 2021), other approaches that lead to more complex, systematic, and inclusive methodologies, greater socio-economic impact, and technology integration (Walsh, Huang, & Felix, 2019) are the ways to go.

The data in Table 1 point out that while the nursing curriculum in the Philippines is rather standardized across the country, research knowledge does not look quite standard given the participating state universities in Luzon. During the pandemic, meta-analysis proved useful in evaluating data across sources to help communities cope with uncertainties. As a result, the low rank of knowledge of meta-analysis and data mining should be a source of concern during times when they are most valuable and needed. Data mining has been a frontier in health research because it provides an excellent avenue for evaluating patients' health, thus enhancing the ability to make sound clinical judgments in providing quality care. Hence, given that different communities have collected information during the pandemic, the next step would be to read them and generate knowledge from them to help the most vulnerable communities.

The data in Table 1 indicate that the second step may not even be likely considered, much less taken, as a way to make sense of data, especially publicly accessible ones because of the low numbers in data mining and meta-analysis in quantitative research.

Quantitativa	School A		Schoo	I B	Total		
Research Approach	Percentage (%)	Rank	Percentage (%)	Rank	Mean (%)	Rank	
Polling	81.8	2.25	33.3	6	57.5	5	
Testing	81.8	2.25	66.7	1	74.3	1	
Data Mining	60.6	5	16.7	4.5	38.7	7	
Meta-Analysis	69.7	4	16.7	4.5	43.2	6	
Experimental	81.8	2.25	50.0	2.3	65.9	2.5	
Quasi-experimental	84.8	1	50.0	2.3	64.7	4	
Multiple/Case Study	81.8	2.25	50.0	2.3	65.9	2.5	

Table 1. Self-reported knowledge of quantitative approaches

Note: Numbers marked in red are the lowest ranked in the set.

Qualitative research approaches. Altogether, grounded theory (GT) ranked highest, followed by phenomenology and multiple/case studies (see Table 2). GT is more known in School B. Phenomenology is more popular in School A. Data mining and meta-analysis(-synthesis) are still two of the lowest-ranked approaches relative to the other qualitative approaches. This means that these two are the least known in terms of qualitative and quantitative research. Hence, readily available qualitative data is likely to be the least used for research purposes among the nursing faculty in both schools.

Qualitativa	School	A	Schoo	ol B	Total	
Research Approach	Percentage (%)	Rank	Percentage (%)	Rank	Mean (%)	Rank
Polling	81.8	2.5	33.3	4	57.6	6
Meta-analysis(-synthesis)	69.7	6.5	16.7	5.5	43.2	7
Data Mining	60.6	8	16.7	5.5	38.7	8
Narrative Inquiry	69.7	6.5	50.0	2.25	59.9	5
Phenomenology	84.8	1	50.0	2.25	67.4	2
Grounded Theory	72.7	5	66.7	1	69.7	1
Ethnography	75.8	4	50.0	2.25	62.9	4
Multiple/Case Study	81.8	2.5	50.0	2.25	65.9	3

Table 2. Self-reported knowledge of qualitative approaches

Note: Numbers marked in red are the lowest ranked in the set.

Narrative inquiry is the lowest-ranked qualitative research approach in School A. Polling is ranked second-lowest in School B, after data mining and meta-analysis; all original qualitative approaches (phenomenology, GT, narrative inquiry, multiple/case study, and ethnography) rank in the top two among School B respondents. This indicates that narrative inquiry is not disseminated as much as the other four uniquely qualitative approaches in nursing research education, despite being the most flexible and accessible approach given the nature of narratives—the narrative is the most dominant form of information in qualitative research. The respondents' low rankings of meta-analysis(-synthesis) and data mining are understandable given that both approaches did not originate in the qualitative tradition but were recently adapted by it to expand its methodological toolkit. Being recently added, it is expected that they will be the latest cascaded research approaches in nursing research courses.

Given the data in Tables 1 and 2, School B is lagging behind School A. However, due to the smaller sample size in School B, comparisons must be done with caution. So far, it can be seen that School A's respondents have higher knowledge self-reports and, as such, reveal greater confidence in qualitative and quantitative research as a nursing education and research community relative to School A. Both schools need support to develop greater knowledge of data mining and meta-analysis. Greater knowledge of the identified research approach allows faculty members of both schools to gain a higher sense of confidence in their research undertakings, utilizing all approaches in quantitative and qualitative research, thereby improving their research productivity on nursing practice, nursing education, and nursing administration (Tingen, Burnett, Murchison, & Zhu, 2009).

Information Gathering Methods. In both schools, the three most traditional methods of social science research (survey, interview, and focus group discussion or FGD) were found to be most familiar to the respondents. This is consistent with the findings under research approaches in another study (Bantugan, Anonuevo, &Maligaya, 2022) involving municipality-based tertiary schools in the National Capital Region (NCR).

Figure 1 shows the dominance of the survey as a research method, followed very closely by the interview. A distant third is the FGD. In fourth place is audio documentation. All four had a respondent share of more than half the respondents. Beyond a third of the respondents was aware of journaling, video documentation, and reflective writing—methods popularly associated with ethnographic observation. The two least known methods in School A are netnography and the Delphi Method. In School B, all were not knowledgeable about the two methods. This is also consistent with a previous study (Bantugan, Anonuevo, &Maligaya, 2022). Thus, local government colleges in the NCR and state universities north and south of the NCR seem to be on the same page about their methodological weaknesses.

Figure 2 shows knowledge of research methods compared to School A, echoing the previous findings in Tables 1 and 2. Figure 2 also indicates that School B respondents are not knowledgeable of seven out of the 17 options presented in the survey, which renders their research community quite limited in their methodological repertoire, putting them at a disadvantage in terms of the quality of research that can be accomplished and access to different kinds of research projects in the future. That said, School B requires more input on research methods for its nursing faculty.



Figure 1. Research methods reported as known by the respondents in School A



Figure 2. Research methods reported as known by the respondents in School B

Analytical and Data Processing Techniques. Both schools A and B are most knowledgeable in the use of descriptive statistics in processing data (the latter having slightly higher self-reports than the former despite limited options in research methods) (refer to Figures 3 and 4). These data were also found in a previous study (Bantugan, Anonuevo, &Maligaya, 2022). Given those, there is no problem with their knowledge of descriptive statistics; however, it is hardly employed in data mining and meta-analysis(-synthesis). This means that most, if not all, nursing researchers in both schools have the skill to process quantitative data, but they are not equipped to use those skills on readily available data in their respective institutions. This is a gap that must be addressed to enhance research productivity in their respective institutions particularly in nursing practice, nursing education, and nursing administration (Tingen, Burnett, Murchison, & Zhu, 2009).

Knowledge of inferential statistics is just half as common as descriptive statistics at the most (in School A). In School B, those who know inferential statistics make up less than a fifth of those who are knowledgeable in descriptive statistics. Exact numbers aside, there is an obvious knowledge gap in quantitative research that could potentially help bridge the research gap in emerging areas in nursing research such as nursing undergraduate, graduate, and continuing education, Internet in nursing education, and clinical quality training (Yang, Wang, Yang, & Jiang 2021), and online learning performance, and satisfaction (Oducado&Estoque, 2021) where quantitative assessments and evaluations are critical to decision-making.

Qualitative data processing techniques that were reportedly weak in both schools are important in understanding new health concerns such as COVID-19's impact on nursing students' mental health (Barette&Taycross, 2021; Aslan, 2021; Temiz, 2020), online learning experiences (Hu et al., 2022). Qualitative or otherwise, nursing researchers must be able to cover both COVID-19 and non-COVID-19 areas to enlighten society about their immediate and long-standing concerns that also affect their practice.

Given that state universities are provided by the government with the network and financial resources to recruit a large number of participants in quantitative research, and yet they are only limited to descriptive statistics, their potential for maximizing data processing is likely not to be fully realized. Similarly, should any of the faculty members in both schools find themselves on thesis or dissertation panels in the future, they will not likely be able to guide students on how to do inferential statistics and how to ensure that the conditions required for its proper implementation are satisfied. Aside from inputs on data mining and meta-analysis, both schools need further inputs on inferential statistical analysis.

With the relatively high rank of multiple or case analysis as a known research approach, cross-case analysis was found to be one of the least known quantitative analytical techniques. This presents a gap between a particular research approach and its corresponding analytical techniques which was also found between the survey and inferential statistics. Given that market research is a possible option for both schools given their knowledge of the survey method and descriptive statistical analysis, their weaknesses in cross-case and market analysis might hinder them from doing market research for their institutional marketing efforts or nursing entrepreneurship studies.



Figure 3. Data analytical techniques reported as known by the respondents in School A



Figure 4. Data analytical techniques reported as known by the respondents in School B

Cybernetic analysis, useful in the study of systems (like health systems), is not known to the nursing faculty members at both schools, which is also consistent with the data found in local government colleges by Bantugan and associates (2022). In this era of technology, nursing faculty must learn and be equipped with the research approaches related to technology, such as cybernetic analysis, so that, ultimately, generated data will be utilized quickly for the benefit of either individual or community clients. This will also make both schools at par with other nursing schools in terms of research engagement, not only within the country but also globally.

Worth noting is the low reports on knowledge of GT coding, despite its high ranking among the other qualitative research approaches, particularly in School B (see Table 2). While School A had 72.7 percent of its respondents knowing about GT and 66.7 percent of the same in School B, knowledge of GT coding went only as high as 6.1 percent for School A (while School B had zero). This means that their knowledge of GT is limited at best. Thus, such knowledge must be improved to help students learn better and bring the quality of potential GT studies up to standard.

Similarly, phenomenology, narrative inquiry, ethnography, and (qualitative) multiple/case studies all require some form of thematic analysis as a starting point. Both schools reported knowing at least four to a high degree (except for narrative inquiry in School A), but knowledge of thematic analysis was only as high as 48.5 percent in School A and only 33.3 percent in School B. This means that, like GT, both schools need input on thematic analysis to enhance their knowledge of the qualitative research methods they report having the most knowledge of.

Consistent with Figure 2 findings, School B also reported no knowledge of seven out of the 18 analytical techniques provided as options. Furthermore, only one analytical technique (descriptive statistics) was known by more than half of the respondents. The other options were known to only a third of the respondents at most. This points out that School B has a great need for research input on analytical techniques.

IV. Research Writing Process

Proposal Writing: Introduction. Data from the 4-point Likert scale survey from both HEIs revealed that the respondents admitted to being most knowledgeable in doing the literature review (with a mean of 2.7 out of 4.0 or "quite knowledgeable" for School A and 2.4 for School B corresponding to "not quite knowledgeable"), which was also found in a previous study of local colleges in the NCR by Bantugan and associates (2022). Overall, School A was in a better position than School B concerning writing a proposal. This, then, is an area requiring support for School B. Regardless of the actual numbers, both schools had lower means for developing research objectives and problems, as well as building the study framework.

Proposal Writing: Methodology. Regarding methodology, both nursing faculties showed weaknesses in descriptive and inferential statistics (see Table 3). It should be noted that both schools reported the greatest knowledge of descriptive statistics in Figures 3 and 4. That said, even their reported knowledge of descriptive statistics must be reexamined, as was also suggested for phenomenology and GT. School A's reporting of inadequacy in the area of instrument development in quantitative research demands a reexamination of its reported knowledge of the survey method, in particular, and quantitative research, in general. This necessitates efforts in School A to align quantitative research knowledge. Meanwhile, School B reported inadequacies in the area of quantitative data analysis and mixing quantitative with qualitative methods.

Domain	Dimension	Mean (School A)	Qualitative Interpretation	Mean (School B)	Qualitative Interpretation
Background		2.6	QK	2.3	NK
	Formulating objectives and research questions	2.6	QK	2.3	NK
	Literature Review	2.7	QK	2.4	NK
	Constructing the Study Framework	2.6	QK	2.2	NK
Quantitative Methodology		2.6	QK	2.3	NK
	Design	2.8	QK	3.0	QK
	Mixed Method	2.6	QK	2.5	NK
	Instrument Development	2.5	NK	2.8	QK
	Descriptive Statistics	2.5	NK	2.0	NK
	Inferential Statistics	2.4	NK	2.0	NK
	Visual Representation	2.7	QK	2.3	NK
	Use of Online Applications	2.8	QK	1.8	NK
Qualitative Methodology		2.5	NK	2.4	NK
	Design	2.5	NK	2.7	QK
	Mixed Method	2.3	NK	2.5	NK
	Instrument Development	2.3	NK	2.8	QK
	Narrative Analysis	2.4	NK	2.3	NK
	Use of Online Applications	2.8	QK	1.8	NK

Table 3. Level o	f Knowledgeabilitv	on Domains and	Dimensions of	Research Pro	posal Writing
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Legend:

3.26 - 4.00 - Very knowledgeable (VK)

2.51 - 3.25 - Quite knowledgeable (QK)

1.76 - 2.50 - Not so knowledgeable (NK)

1-00 - 1.75 - Without knowledge (WK)

With regards to qualitative methodology, School A revealed more challenges than School B in that their respondents overall reported not being quite knowledgeable from design to analysis. Their report of being quite knowledgeable about online applications for qualitative analysis will not serve them well given the previously mentioned areas of inadequacy. As such, it seems that School B, despite having a more limited methodological and analytical repertoire, had one less area of inadequacy compared to School A.

Lack of adequate knowledge on dominantly qualitative mixed methods and other earlier data from School A revealed a lack of knowledge in the analysis phase and the use of online applications for it. While both schools have distinct areas of weakness, nursing faculty at both schools report being unfamiliar with predominantly qualitative mixed-methods research.

V. Discussion

Transfer of "Knowledge". The data on self-reported knowledge from research presented above constitute the baseline graph in Figure 5. While more than half of the respondents at both state universities reported knowledge of research, that knowledge must be qualified as needing further clarification and enrichment in both the quantitative and qualitative aspects. If the baseline knowledge of research is not well supported, the transfer of the same knowledge will not be productive and useful.

Figure 5 shows that the transfer of knowledge diminishes from the conduct of research to leading a team of researchers. It is worth noting that, from knowing research to conducting research, significant attrition happens. A report of only 33.3 percent of nursing faculty in School A conducting research when 84.4 percent report knowledge of research is a clear cause for concern. One should ask what inhibits their faculty members from conducting research, given their knowledge. This attrition is mirrored by the data in School B. However, while both schools have the same percentage in the area of conducting research, the percentage in School B must be seen from the 66.7 percent self-reported knowledge of research gained through formal training (this does not include knowledge gained through self-study). Even fewer nursing faculty conduct research in School B.

School A had a greater attrition rate than School B from presenting a research paper to publishing in a peer-reviewed journal. School A slides down sharply from 24.2 percent to 9.1 percent, while School B moves from 33.3 percent to 16.7 percent. School A recovers with mentoring as the publication figure more than doubles, while School B shows a sustained number. Both schools recover with respect to sitting on a research panel (more for School B than for School A). Thereafter, however, School B stops with knowledge transfer, while School A returns to the attrition trend until 3 percent of their nursing faculty report leading a research team. This general attrition was also found among local government colleges in the NCR (Bantugan et al., 2022), with variations in the middle section of the graph. This means that what happens in state universities also happens in local government colleges and that knowledge gained through research does not usually translate to knowledge application. Thus, it is becoming evident that there are real roadblocks in the knowledge transfer process in higher educational institutions and government-funded schools, thus far, as shown by this study and that previously mentioned.

Given the data above on self-reported research knowledge, one can surmise that, perhaps, the attrition can be attributed to a less-than-ideal state of knowledge as reported by the respondents. True knowledge, at least from the perspective of knowledge management, is actionable knowledge. The Nicholas Institute (2022) wrote, "For knowledge to result in action, an individual must have the authority and capacity to make and implement a decision" (para. 4). That said, it is apt to look at whether the nursing faculty respondents have the power and ability to at least conduct research or ultimately seek to lead a group that decides to do the same. The small number of faculty reporting having conducted research (at 33% in Figure 5) says otherwise.

Previous research reviewed suggests several possible factors, namely: the lack of management and monitoring systems (Borg &Alshumaimeri, 2012); constraints in time and institutional support (Sakarkaya&Bümen, 2022); the interplay between individual and institutional factors affect research productivity (Uwize et al., 2021; Mantikayan&Abdugani, 2018); national variables (Henry, Hamid, and Khan, 2020); the absence of a research center, regular faculty involvement in regular research activities, the presence of externally funded research, the publication of completed research, and the presentation of research-based papers and inventions (Galleto, 2016); and others like fear of rejection (Wa-Mbaleka, 2015).

The ideal research knowledge in a knowledge institution is that which encourages and empowers others who gain that knowledge to transfer it to their organization. That it happens only to a minority means that the current knowledge of research in Schools A and B is something less than empowering; otherwise, the self-reports would be higher. Taken in the context of the nursing profession, this research knowledge is "nursing research" knowledge. At this point, one should ask: is the "nursing research" knowledge currently being transferred in graduate schools nationwide, in general, or in North and South Luzon, where Schools A and B are located, in particular, not empowering enough to result in desired action?

As a result, without empowering "research" or "nursing research" knowledge, the transfer of said knowledge may remain futile, as it is unable to drive action. Given the data on the nursing faculty's research knowledge presented earlier and their weaknesses in the same, it was found that the self-reported knowledge must be further validated and qualified. Knowing quantitative and/or qualitative research but not the corresponding techniques in data analysis and synthesis reveals superficial knowledge that gets transferred to younger generations mostly within their respective institutions, given that they rarely get involved with research presentations as a result of their research engagements. Transferring superficial or shallow knowledge to young generations will confuse not only in nursing research but especially in the nursing practice, given that evidence-based decision-making and evidence-based practice are highly recommended to render excellent health care interventions.

Led a team - Up to 3%				0%				
Gave a talk - Up to 9.1%			0%					
Sat on a panel - Up to 27.3%			Up to 50.0%			0.0%		
Mentored someone - Up to 24.2%			Up to 16.7%					
Published in a peer-reviewed journal - Up to 9.1%			Up to 16.7%					
Presented a research paper - Up to 24.2%			Up to 33.3%					
Conducted research - Up to 33.3%				Up to 33.3%				
Knowledgeab le - Up to 84.4%								Up to 66.7%

Legend: Blue - School A; Orange - School B

Figure 5. Research Productivity Comparison across Different Research Activities

Aside from the previously mentioned inputs, this study recommends a re-examination of the ontology of "research", in general, and "nursing research", in particular, as taught in state universities to address the lack

of knowledge transfer revealed. Is it enough to implement a "publish or perish" rule that merely serves as an extrinsic motivation for nursing faculty to comply? Are there intrinsic motivations that must be cultivated institutionally to drive the ideal research knowledge transfer involving nursing faculty members not just in Schools A and B but nationally? Is this situation also a reflection of how "nursing research" is integrated into the curriculum despite curricular revisions in the past few years? Given better intrinsic motivations, must there be distinct intrinsic nursing research motivations and outcomes that will drive action pertinent to the concerns of the nursing profession? Further, are the intrinsic and extrinsic motivations enough for faculty members to drive the needed research knowledge transfer? Does the institution also play a big role in shaping said motivations?

Only with better knowledge from research can there be better action that can shape public opinion during times like the pandemic. During the COVID-19 pandemic, government units issued statements that confused, particularly regarding the use of face masks and the occurrence of COVID-19 infection waves. In an environment of rampant misinformation, disinformation, and mal-information, health professionals like nurses should become sources of valid information based on research findings of all kinds from a variety of disciplines. Given the multiplicity of information sources online, nurses should be the first to learn to question research findings and seek a more holistic perspective, given their social science research knowledge that they should be able to process together with those of the medical field. Only with access to a more diverse pool of research knowledge and a more discerning and reflexive construction and transfer of research knowledge can they better serve communities at risk as more responsible opinion influencers. This means that the nursing educators from Schools A and B must not be satisfied only with further enriching the knowledge that they already have but also with seeking new ways to construct knowledge beyond their pursuit of an advanced nursing degree. Nursing educators must assert themselves to find a starting point to find opportunities in translating research engagements and utilizing available resources.

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