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Research Competence of Graduate Students of the College of Education, Northwest Samar State University, Philippines

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Abstract

Graduate students are expected to demonstrate research know-how in order to successfully complete their educational goals (CMO 53, s. 2007). This study assessed the research competence of the graduate students of the College of Education, Northwest Samar State University, Philippines. More so, this utilized descriptive-correlational design employing the use of a questionnaire to gather data on the profile and level of research competence of the graduate students. Data were analyzed and statistically treated with frequency, percentages, mean, standard deviation, and Pearson r. Results revealed that Graduate students were of middle age, mostly female, single, have been teaching for less than ten years, mostly Teacher 1, have only attended 4 to 5 days of training and whose mean length of research involvement was 1.19 year. Graduate students perceived themselves as "competent" in the indicators of research competence. Furthermore, no significant relationship was found between Graduate students' profile and their research competence. It was also revealed that the inadequacy of training and seminar, lack of technical assistance, difficulty in identifying the researchable issues and constructing research titles, too many teaching loads/assignments, and lack of enough time to carry out research in the school were the problems encountered. Thus, it is suggested that the Graduate students must undergo enhancement training for improved research competence.

Keywords: research competence, graduate students, profile, descriptive-correlational design, research-related problems

Introduction

For graduate students to be able to write a thesis or dissertation as their final requirement to acquire the degree (CMO 53, s. 2007), they must be fully committed to updating their educational knowledge, abilities, and competencies, especially their research competence. Research is an essential function and component of any educational institution because it is one of the primary responsibilities of the academe. It essentially refers to the acquisition of new information using a variety of techniques and procedures. Research offers chances for innovation, which is essential for fostering creativity and raising cognitive abilities.

Apparently, this development appears to include preparedness to undertake research, research behavior skills, mastery of applicable techniques and technology in the area targeted by the training direction, and the capacity to function in unpredictable work environments (Abdrafikova, Akhmadullina, & Singatullova, 2014). Consequently, it becomes crucial and pertinent for researchers and faculty members, as well as undergraduate and graduate students, to be able to conduct research skillfully and sensibly and

to report on its findings (Baklashova, 2014; Gorelova, Zalyaeva, & Sungatullina, 2015). In addition, Yarullin, Bushmeleva, and Tsyrkun (2015) posited that having mastery of theoretical and practical research methods, as well as the ability to draw appropriate conclusions from the research that has been done, is crucial for graduate students in order to address important and professional problems.

Accordingly, creating a professional culture where teachers read, comprehend, and do their own research is an essential and important step in making teaching an evidence-based profession (Furlong & Salisbury, 2005). Compelling evidence would say that research management is one of the skills that graduate students should possess as they seek work in academic and non-academic environments, according to Polziehn (2011). These skills include structuring the setting in which research is conducted to promote the discovery of new information and its application in practice; possessing acceptable organizational abilities and adequate understanding of the project, people, and budget reporting; working well in scenarios involving a variety of projects with varying goals, schedules, and stakeholders; using efficient project management techniques by prioritizing work, creating research goals and intermediate milestones; creating, assembling, and overseeing budgets; collecting analyzing, and keeping accounting records; designing, assessing, and bargaining contracts; recognizing the idea of results-based management of research operations; and using established reporting procedures to inform the proper institution, governmental, and/or business officials (Polziehn, 2011).

Strokova (2018) argued that graduate school professors will be able to selectively develop the graduate students' abilities, which are required for writing and defending their dissertation if they are aware of the deficiencies in their research competency. The development of Ph.D. student competency for research and instructional activities will significantly enhance with creative application and methodically scientific-pedagogical activity (Strokova, 2018).

Therefore, universities and colleges that are committed to becoming research institutions must consider the components of research culture that boost research output (Salazar-Clemea & Almonte-Acosta, 2007). However, research shows that many candidates for the graduate program have limited prior knowledge and research-related abilities (Meerah, et al, 2011).

Davidson and Palermo (2015) conducted their study using a set of specific research techniques, including data collection and management, data interpretation, independence, and critical thinking. The results of their study suggest that engaging in the research itself is essential for developing research abilities. Correspondingly, Gilmore and Feldon (2010) posited that while conducting research can improve teaching abilities, teaching activities develop research capabilities.

According to their study, graduate students reported having grown most in oral communication skills, information-gathering abilities, and methodological understanding. Moreover, their study indicated that personal values, research, and teaching practices were influential on graduate students' perceptions of their research and teaching abilities. Henceforth, researchers believed that the literature cited has shed light on the current investigation and informed the readers about the wide range of criteria that were examined. Furthermore, we believed that the previously cited literature had assisted in identifying the research gap represented by the study's main construct – the research competence of graduate students. Thus, to increase their capacity to write a thesis and/or dissertation, Graduate students in the College of Education (CoEd) at Northwest Samar State University (NwSSU) must have their research competence evaluated.

Objectives of the Study

This study aimed to create a program to improve graduate students' research capabilities. In accordance, it sought to fulfill the following specific objectives:

1. Determine the profile of the graduate students of the CoEd in terms of age, sex, civil status, bachelor's degree obtained and graduate program enrolled, position, length of teaching/supervisory experience, length of research involvement, and a number of relevant training attended;
2. Ascertain the level of research competence of the graduate students of the CoEd in terms of the motivational-value component, methodology-reflective component, operational-activity component, and emotional-volitional component;
3. Determine the significant relationships between the profile in terms of age, length of teaching/supervisory experience, length of research involvement, and a number of relevant training attended by the graduate students of the CoEd and their research competence; and
4. Find out the research-related problems encountered by the graduate students of the CoEd.

Methodology

Research Design. The study utilized the descriptive-correlational design to establish the relationship between the profile and research competence of CoEd's graduate students of NwSSU. Research that explains a situation's nature as it is at the time of the study and investigates the reasons for a specific phenomenon is known as descriptive research (Fraenkel & Wallen, 2006). In this study, the descriptive method was used to determine the profile of the respondents and their research competence. The correlation method was used to determine the significant relationship between the profile of the respondents and research competence.

Respondents of the Study. The respondents of the study were Graduate students of the CoEd, NwSSU, Calbayog City enrolled in the Second Semester of the School Year 2018-2019. There were 136 respondents in the study which comprised 80% of the entire population excluding those who are enrolled in the Thesis/Dissertation Seminar and Thesis/Dissertation Writing. Through random sampling, the researcher identified the pool of respondents who are willing to answer the survey.

Research Instrument. A questionnaire was the primary tool for gathering relevant data. The researcher made a modified questionnaire which indicators and attributes of the different categories were taken from the validated questionnaires and findings of the previous studies. In consonance, the instrument was composed of three (3) parts. Part I measures the demographic profile of the respondents in terms of age; sex; civil status; bachelor's degree obtained, the graduate program enrolled in; length of teaching/supervisory experience; length of research involvement; and the number of relevant training attended. Part II assesses the research competence of the respondents through a Likert scale. The attributes, as well as the categories such as motivational-value component, methodology-reflective component, operational-activity component, and emotional-volitional component were drawn from findings and conclusions in the study of Ivanenko, et al. (2015). The research-related problems encountered by the respondents were assessed in Part III of the research instrument.

Data Analysis. The researcher utilized the frequency, percentages, mean, standard deviation, and Pearson r as statistical tools to be able to treat the data and arrive at a valid and reliable interpretation. Further, a 0.05 level of significance was set to determine the statistical significance of the relationships of the relevant data gathered through the aid of computerized statistical software.

Results and Discussion

1. Profile of the CoEd's Graduate Students of NwSSU

The profile of the Graduate students as respondents was used to describe the relationships on their level of research competence. Table 1 presents the variables under the profile of respondents, such as age, sex, civil status, highest educational attainment, position, length of teaching experience, length of research involvement, and the number of relevant trainings attended.

Table 1
Distribution of Respondents' Profile

Profile Variable	Categories	Frequency (N=136)	Percentage (%)
Age	24 below	26	19.12
	25-34	74	54.41
	35-44	24	17.65
	45-54	12	8.82
Sex	Male	39	28.68
	Female	97	71.32
Civil Status	Single	76	55.88
	Married	59	43.38
	Others	1	0.74
Bachelor's Degree Obtained	BSEd	44	32.35
	BEEd	56	41.18
	Others	36	26.47
Graduate Program Enrolled	MAEd	67	49.26
	MAST-GenSci	40	29.41
	MAST-Math	11	8.09
	EdD	18	13.24
Position	Teacher 1-3	107	78.67
	Head Teacher 1-2	1	0.73
	Master Teacher 1-3	5	3.68
	Principal 1-3	4	2.94
	Senior Education Program Specialist (SEPS)	1	0.73
	Administrative Clerk	3	2.21
	Others	15	11.03
Length of Teaching Experience (in years)	5 below	80	58.82
	6-13	39	28.63
	14-21	14	10.29
	22-29	3	2.21
Length of Research Involvement (in years)	3 above	11	8.09
	1-2	23	16.91
	None	102	75.00
Number of Relevant Trainings Attended (in hours)	161 and above	3	2.21
	121-160	1	0.74
	81-120	8	5.88
	41-80	26	19.12
	None	98	72.06

Age. Of the 136 graduate students, 74 (54.41%) belonged to the age bracket of 25-34, 26 (19.12%) of them belonged to the age bracket 24 and below, 24 (17.65%) belonged to 35 and 44, and 12 (8.82%) belonged to 45 above. The mean age of graduate students was 31.62. The data suggest that most of the graduate students were of middle age. This concludes that the respondents were neither too old nor too young to undertake their duties and responsibilities such as doing research.

Sex. The data show that majority of the Graduate students of the CoEd, NwSSU are female with a frequency of 97 (71.32%), and 39 (28.68%) are males. This data emphasizes that there are more female graduate student-respondents as compared to males.

Civil Status. Based on this data, 76 (55.88%) are single, 59 (43.38%) are married, and only one (1) or 0.74% are widowed. This data signifies that most of the graduate students are single, thus, much attention is allocated to their studies.

Bachelor's Degree Obtained. The data stipulate that there are 56 (41.18%) obtained Bachelor in Elementary Education (BEEd), 44 (32.35%) are Bachelor in Secondary Education (BSEd), and 36 (26.47%) are graduates of other baccalaureate degrees such as a Bachelor of Science in Nursing (BSN), Bachelor of Science in Industrial Education (BSIE), Bachelor of Office Administration (BSOAd) among others. Consequently, these data imply that most of the graduate student are education graduates, thereby following the vertical articulation since they are taking their graduate education in the College of Education.

Graduate Program Enrolled. The data specify that there are 67 (49.26%) enrolled in the program, Master of Arts in Education (MAEd) major in Administration and Supervision, 40 (29.41%) were enrolled in Master of Arts in Science Teaching (MAST) major in General Science, 11 (8.09%) were enrolled in Master of Arts in Science Teaching (MAST) major in Mathematics and 18 (13.24%) were enrolled in Doctor of Education (EdD) major in Educational Administration. Accordingly, these data imply that most of the respondents wanted to become administrators of the schools.

Position. It can be noticed in the table, that there are 107 (78.67%) of the respondents are Teacher 1-3. One (1) or 0.73 % are Head Teacher 1-2. Five (3.68%) are Master Teacher 1-5. Four (2.94%) are Principal 1-3O. One (1) or 0.73% is a Senior Education Program Specialist (SEPS). Three (3) or 2.21% are an administrative clerk and 15 (11.03%) are belonging to the others, which means working in the private sector or in the state, universities, and colleges (SUCs). It is evident in this data that the respondents were dominated by Teacher 1.

Length of Teaching Experience. As reflected in the table, the majority of the Graduate students (80 or 58.82%) have five or below years of service in the teaching profession. Subsequently, there are 39 (28.68%) who have teaching experience of 6-13 years, 14 (10.29%) having 14-21 years of service, and three (3) or 2.21% having 22-29 years of service. These data clearly indicate that most of the respondents are new in the teaching profession for having a teaching experience of fewer than ten years. This implication was derived from the fact that the mean score in terms of teaching experience is 5.83, therefore most of the graduate students of the CoEd have less than ten years of teaching experience.

Length of Research Involvement. It can be perceived in the table that the majority of the Graduate students (102 or 75%) are not involved in the research undertakings. Considerably, 23 (16.91%) are 1 to 2 years of involvement in research and 11 (8.09%) are 3 and above years affiliated with research undertakings. These data signify that most of the graduate student seldom indulge themselves in research undertakings. As a matter of fact, the mean score in terms of the length of research involvement is 1.19, this means that most of the graduate student are not really involved in research, since most of them are still in the process of finishing the academic requirement of their master's degree.

Number of Relevant Trainings Attended. The majority of them do not have relevant trainings attended (98 or 72.06%), while others have 41-80 hours of relevant training attended (26 or 19.12%), then three (3) or 2.21 % have 161 and above hours of training attended, and some have 81-120 hours of relevant training attended (8 or 5.88%), and only one (1) or 0.74% of them have 121-160 hours of relevant training attended. As a matter of fact, the mean score in terms of the number of relevant trainings attended is 41.60

hours which is roughly equal to 4 to 5 days of training. Therefore, the data reveal that graduate students need to be confined to relevant training for research.

2. Level of Research Competence of Graduate Students

The perception of the Graduate students on their level of research competence in terms of motivational-value component, methodology-reflective component, operational-activity component, and emotional-volitional component is illustrated in Table 2.

Table 2
Mean and Standard Deviation on the Level of Research Competence of Graduate Students

Research Competence Components	**Perception**		
	Mean	**Int.**	**SD**
1. Motivational-Value Component	3.89	C	0.78
2. Methodology-Reflective Component	3.72	C	0.76
3. Operational-Activity Component	3.67	C	0.79
4. Emotional-Volitional Component	3.80	C	0.79
Average	**3.77**	**C**	**0.78**

Legend: 4.21 – 5.00 = Very Competent (VC), 3.41 – 4.20 = Competent (C), 2.61 – 3.40 = Slightly Competent (SC), 1.81 - 2.60 = Incompetent (I), 1.00 - 1.80 = Very Incompetent (VI)

Motivational-Value Component. As reflected in the table, the motivational-value component was rated "competent" with an average mean of 3.89 and a standard deviation of 0.78. Thus, the graduate students believed that they have competence in encouraging successful behavior and transparent research inquiry; establishing objectives and guiding principles for doing research; demonstrating an understanding of the value of scientific inquiry, enjoy working creatively in the process of research and educational activities; demonstrating a desire to take part in scholarly meetings and seminars and to publish the findings of their study, and demonstrating an understanding of the need of lifelong learning and growth for a successful career.

Methodology-Reflective Component. As revealed in the table, the methodology-reflective component was rated "competent" with an average mean of 3.72 and a standard deviation of 0.76. This result suggests that graduate students believe themselves to have the ability to apply a teaching reflection to enhance educational material using the findings of research activities; incorporate information from all fields into research; to recognize and to formulate research problems; to identify the aims and objectives of the studied issue, as well as potential solutions, and to choose appropriate techniques, means, and procedures for carrying out research; to formulate hypotheses inductively based on facts, phenomena that are well-known through experience, and results from observations and experiments; to analyze, to synthesize, and to generalize basic and applied research, and to take risks when carrying out research activities and inquiries.

Operational-Activity Component. As revealed in the table, the operational-activity component was rated "competent" with an average mean of 3.67 and a standard deviation of 0.79. Just like in the motivational-value component and methodology-reflective component, the graduate students also believed themselves to have a competent ability in the operational-activity component. This means to say that the respondents perceived themselves to have the ability to present the results of their research undertaking; to use cutting-edge technology in portraying scientific research activity; collaborate on all research-related issues; to use and to promote new information; to find a "dynamic equilibrium" while tackling research-related challenges, and is skilled in designing, carrying out, processing, and analyzing data; to display a

good command of team management techniques; to development outcomes and practice implementation; to do patent searches and look for information about creative ventures; to use software applications in processing the gathered data, and to demonstrate understanding of current competitive concerns and how to use them in scientific research operations.

Emotional-Volitional Component. As mirrored in the table, the emotional-volitional component was rated "competent" with an average mean of 3.80 and a standard deviation of 0.79. The graduate students believed that they have the necessary abilities in terms of the emotional-volitional component. This means that they can competently adjust to the expression of high moral qualities in research activities; show tenacity in the pursuit of personal development through research activities; display a capacity for ongoing self-improvement in research projects; manage stress accordingly while working on research activities; show continuous professional development ability; and display quest of the high-quality final product of their research work.

To summarize, the Graduate students perceived themselves as capable to undertake research. It is due to the fact that they have rated themselves "competent" overall (M = 3.77, SD = 0.78). Appropriately, they are pursuing Graduate studies, this may be the reason why they are fortified with competence in doing research.

3. Relationship between the Profile of Graduate Students and their Research Competence

Pearson r correlation was used in determining the relationship between the profile in terms of age, teaching experience, research involvement, and training attended by the graduate students and their research competence.

3.1. In terms of Age Teaching Experience and Research Competence

Table 3
Pearson r Correlation between the Profile of Graduate Students in terms of Age and Teaching Experience and their Research Competence

Research Competencies	Age			Teaching Experience		
	r	Int	p-value	r	Int	p-value
A. Motivational-value Component	-0.049 ns	NC	0.571	-0.066 ns	NC	0.441
B. Methodology-reflective Component	-0.035 ns	NC	0.686	-0.017 ns	NC	0.848
C. Operational-activity Component	-0.035 ns	NC	0.685	-0.067 ns	NC	0.440
D. Emotional-volitional Component	-0.006 ns	NC	0.944	-0.036 ns	NC	0.677
Average Mean	**-0.030 ns**	**NC**	**0.732**	**-0.049 ns**	**NC**	**0.568**

Legend: ns – Not Significant at .05 level

Scale	Interpretation
0.41 - 0.70	(MC) Marked/Moderate Correlation
0.21 - 0.40	(LC) Low Correlation
0.00 - 0.20	(NC) Negligible Correlation

n = 136

Age and Teaching Experience. As appeared in Table 3, the overall result on the relationship between the profile of the graduate students and their level of research competence in terms of age (r = -0.030, p = 0.732) and teaching experience (r = -0.049, p = 0.568) showed negligible correlation. Hence, the p-values of the age and length of teaching experience profile are greater than the p-value at a 0.05 level of significance. This means that the age and teaching experience of graduate students has no significant correlation to their level of research competence.

3.2. In terms of Research Involvement Training Attended and Research Competence

Table 4
Pearson r Correlation between the Profile of Graduate Students in terms of Research Involvement and Training Attended and their Research Competence

Research Competencies	Research Involvement			Trainings Attended		
	r	Int	p-value	r	Int	p-value
A. Motivational-value Component	0.071^{ns}	NC	0.409	-0.013^{ns}	NC	0.877
B. Methodology-reflective Component	0.133^{ns}	NC	0.124	0.103^{ns}	NC	0.232
C. Operational-activity Component	0.000^{ns}	NC	0.996	0.080^{ns}	NC	0.353
D. Emotional-volitional Component	0.134^{ns}	NC	0.121	0.063^{ns}	NC	0.469
Average Mean	**0.090^{ns}**	**NC**	**0.296**	**0.061^{ns}**	**NC**	**0.477**

Research Involvement and Training Attended. As appeared in Table 4, the overall result on the relationship between the profile of the graduate students and their level of research competence in terms of research involvement (r = 0.090, p = 0.296) and training attended (r = 0.061, p = 0.477) showed negligible correlation. Hence, the p-values of the length of research involvement and number of relevant trainings attended profiles are greater than the p-value at a 0.05 level of significance. This means that the research involvement and training attended by graduate students have no significant correlation to their level of research competence.

In view of this data, the study fails to reject the null hypothesis stating that there is no significant relationship between the profile in terms of age, teaching experience, research involvement and trainings attended of the graduate students and their research competence.

4. Research-Related Problems Encountered by the Graduate Students

The research-related problems encountered by the graduate students, were also tallied to get the frequency distribution and the ranking. Table 5 presents the data on the research-related problems encountered by the respondents.

Table 5
Ranking on the Research-Related Problems Encountered by the Graduate Students

Problems Encountered	f	Rank
Inadequacy of training and seminar on research activities	106	1
Lack of technical assistance in doing research	97	2
Difficulty in identifying the researchable issues and constructing of research title	78	3
Lack of enough time to carry out research in the school	70	4
Too many teaching loads/assignments	67	5
No confidence in undertaking research due to lack of research expertise	64	6
Problems on the statistical treatment of data or what statistical tool to use	60	7
Lack of funding at the institution for research	59	8
Not enough journals, research books, research papers, and other reference items in the library	56	9
Lack of library resources	55	10

It is explicitly displayed in Table 5 that the top ten (10) research-related problems encountered were as follows: (1) inadequacy of training and seminar on research activities, (2) lack of technical assistance in doing research, (3) difficulty in constructing of interpretation, analysis, findings, conclusions, and recommendations, (4) lack of enough time to carry out research in the school, (5) too many teaching loads/assignments, (6) no confidence in undertaking research due to lack of research expertise, (7) problems on the statistical treatment of data or what statistical tool to use, (8) lack of funding at the institution for research, (9) not enough journals, research books, research papers, and other reference items in the library, and (10) lack of library resources. These findings support the study of Strokova (2018) that many Ph.D. students lack the necessary skills to plan and carry out their own independent scholarly and educational

searches. Additionally, weak points in their research proficiency are exposed, including their failure to employ the most crucial components of the methodological corpus and issues with authoring scientific documents. In addition, Strokova (2018) disclosed that the methodological seminars in the education department, group analyses of scientific articles for publication, group discussions of teaching seminars and lectures for educators and Ph.D. students, role mini-plays, and participation in departmental events all proved to be practical methods and techniques for enhancing Ph.D. students' research competence. Identically, these also highlighted the study of Ismail & Meerah (2011) that the Ph.D. students graduate should still have room for improvement in terms of their research abilities, perhaps by participating in research and participating in specialized training.

Moreover, the findings also support the accounts according to the study of Wayment and Dickson (2008) that departmental ideas to increase undergraduate students' access to research experiences receive very weak support. A lack of advertising, irregular faculty availability, unequal access to scholarships and poor curricular scheduling was found to be five obstacles to the current program (Wayment & Dickson, 2008).

This further confirmed the data on the profile of the respondents under the number of relevant trainings attended. It was found that almost three-fourths of the respondents were not able to attend relevant training. With this, the graduate students find it difficult to undertake research works.

Conclusions

The graduate students of the CoEd, NwSSU were in middle age, thus, they were neither too old nor too young to undertake research activities. The respondents have minimal involvement in research undertakings. The graduate students were considered new in the teaching profession. In general, the graduate students perceived themselves to have possessed the necessary research competence to carry out research works. Age, length of teaching/supervisory experience, length of research involvement, and the number of relevant trainings attended had shown no significant relationship with the graduate student's research competence. The graduate students' claim of competence in doing research seems inconsistent with the enumerated research-related problems encountered by them namely inadequacy of training and seminar on research activities, lack of technical assistance in doing research, and difficulty in identifying researchable issues and constructing research titles.

Recommendations

The College of Education should intensify the conduct of training, seminars, conferences, and workshops for the graduate students through creating some program interventions to keep them abreast with the latest development in the academe, thereby, improving their skills especially in undertaking research and helping them bridge their learning gaps in doing research. Guidance and intervention should be given to the graduate students by the Office of the Research and Development Services of the University. Moreover, graduate students should indulge themselves in professional development and advancement activities such as attending conferences and becoming members of different academic and professional organizations to improve their research competence. Effective planning for the schedules should be given emphasis by the graduate students to give them enough time and concentration in facilitating and carrying out research work. Another study may be conducted by future researchers to find out the differences and relationship among the profile, research competence and productivity of the graduate students of other colleges of the University and in the other State Universities and Colleges (SUCs) as well as in the private sectors.

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