RESEARCH CAPABILITY OF DEPED TEACHERS: BASIS FOR EXTENSION PROGRAM OF THE UNIVERSITY

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ABSTRACT

The contemporary world poses numerous challenges to the concept of research capacity and capability across various academic disciplines. The Department of Education, with its adoption of the Basic Education Research Agenda (DepEd Order No. 39, s. 2016) emphasizes the role of the teachers to generate new knowledge, focus on relevant education issues, and maximize available resources for research. The study aims to assess the research capabilities of the 44 teachers of the SDO Balanga City in the following areas: basics of research, research proposal writing, conducting the research proper, use of statistical tools analysis and interpretation of data, formulating conclusion and recommendation, research report writing, thesis advising, and paneling in thesis oral examination. The study follows the quantitative research method, specifically descriptive evaluative research. This design is to carefully appraise the worthiness of the current study. Overall, the teachers have very good research capabilities. They believed, in general, they have working research knowledge, which makes them confident in writing and teaching research. On the other hand, the teachers manifested the need for training on thesis advising having the lowest rating, which is only indicated as "good", followed using statistical software. In most of the areas where the teachers rated themselves as "very good", the researcher still believes that a support system may still be given since the educational sector always strives for excellence. The end goal of this research undertaking is to collaborate with the SDalanga City through extension services of the university to address the identified problems

Keywords: research capability, DepEd teachers, extension program

INTRODUCTION

The educational system in the Philippines for the past five decades embraces both formal and non-formal education. The first six years of compulsory primary education are from Grade one to six with an optional Grade seven offered by some schools. Secondary education usually comprises four levels of schooling which is largely based on the American system.

Since the Enhanced Basic Education Act (EBEA, known as the K-12 Law) was signed, the Philippines has finally embarked on its most ground-breaking change in the educational system in decades, the K-12 reform. K-12 extends compulsory schooling to Grades 11 and 12, thus adding two years to secondary education.

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Just like any other policies or programs that are newly implemented, the K-12 Curriculum is facing challenges to cope with the demand of such changes. The country was ill-prepared for the extension of two (2) more years of education and it cannot provide enough teachers to meet the new demand of the curriculum. Bala (2017) noted that there are some problems met in connection with the implementation of the new curriculum. These are the insufficient instructional materials and teachers' manuals, some classrooms are congested not to mention the need for more classrooms for the growing number of students, and the newly hired teachers who need re-training to further develop their teaching skills and pedagogical approaches in order to meet the demand of the new subjects incorporated in the curriculum.

Moreover, although curriculum enrichment is an essential key of concern when it comes to ensure better learning outcomes, human resource is still the most significant factor. According to Velasco (2014), a competent teacher and a learner imbued with positive values are vital keys to quality learning. However, with the implementation of the enhanced curriculum, teachers and students have faced new challenges which could have been brought by several factors. To cite some- the "ill-preparedness of DepEd" as stated by Kabataan Party-list Representative Palatino is the lack of budget to fully implement the reforms, shortages in teachers, classrooms, tables, chairs, and other educational materials (Boncoan, 2012). Such scenarios made them vulnerable to difficulties.

As such, a competent teacher is inevitable for successful curriculum implementation. Bala (2017) mentioned that teachers need to be trained specifically in pedagogy, educational research, measurement and evaluation, and classroom management. Lack of competence is a serious concern that needs to be addressed immediately, especially in teaching Research as a subject.

The Department of Education, with its adoption of the Basic Education Research Agenda (DepEd Order No. 39, s. 2016) once again emphasizes the role of the teachers to generate new knowledge on priority research areas, focus on relevant education issues, and maximize available resources for research within and outside the department. The value of research in the department cannot be underestimated, especially in addressing problems specifically in the teaching-learning process. Teachers are expected to conduct research not because they want to but because it comprises five (5) percent of the total score in the individual teacher's evaluation (Ulla, 2017). Further, Ulla reported that several strategies have been done to update and inform the public schools about the importance of doing research, but many of the teachers both in elementary and secondary schools were uninterested and demotivated and tend to ignore the contribution it may bring to their performance evaluation score.

Hypothetically, as mentioned by Abarro and Marino (2016), teachers in the Department of Education are not skillful in conducting research, particularly classroom-based or action research. With this present scenario, it is not surprising to discover that most of the teachers who are assigned to teach Research as a subject may not be well prepared and ill-equipped with knowledge and skills. If teachers were not able to conduct good research, it may be difficult to carry out the task of explaining the entire concept to the pupils.

The concept of research capacity and capability in many academic disciplines, especially in the field of education, faces many challenges in the contemporary world. As used in this context, the research

capability of teachers reflects their ability to teach Research as a subject. As the old adage goes, "You cannot offer what you do not have" is very applicable in this setting. Naturally, if teachers' capability to do research is questionable, it follows that teaching the subject may further raise doubts as to how they would justify their role in explaining research concepts. In a serious discussion about the problems of the K12 Senior High School Curriculum, Fajarda (2014) cited that putting together curricular requirements for the program is one thing and teaching them is quite another. He further stressed that for K12 to succeed in being truly "learner-centered", it must be realistically teacher and region sensitive, that is, the implementation of the program should be subject to the educational, pedagogical, and industrial realities of the country's many different regions – including the actual skills sets of the available teachers.

In the same DepEd Summit organized by CEAP's National Basic Education Commission (NBEC) in 2014, Fajarda revealed the report of Padolina on the Science, Technology, and Mathematics (STEM) strand and Vilches on Humanities strand that many of the subjects like Qualitative Research and Quantitative Research "sounded very HEI" – like belonging to the college or even graduate school education rather than to basic education. If this is the case, it may bring more challenges and justification on how the basic education teachers play their role in the process of transmitting the knowledge of research to the young minds of their pupils.

In a study conducted by Estacio, Barcelona, & Mejia (2018) on the research capabilities of students in the senior high school department of a local university, it was found that overall, the student's research capabilities were only at the average level. Male and female students were comparable in their ability to conduct research. Opportunities for quantitative instruction were lacking in the context of the participants. Looking into the details of the results of the study, data showed that the areas or topics where the students scored low were not covered by the teacher in the current research course; the college prioritizes quality over quantity – covering few topics but with mastery rather than cover a lot of content without learning; and the course started with the basics of doing research. These findings clearly showed that teachers were clearly involved in developing the research capabilities of students in terms of instruction, thus, they could be considered as factors in the ability of the students to do research. Further, the study revealed that in terms of the qualifications of the research instructor, the school preferred to hire instructors who hold master's degrees, but even so, there was no prescription for either the area of specialization or the number of years of teaching experience.

As to the contention of the present study, it is important to consider the expertise of teachers who teach research, that's why in the sample representation, representatives from each strand will be considered for re-training in the field of research, and since the researcher came from the College of Technology, the strand for Technical-Vocational Livelihood will be included. Those teachers who are already teaching research as a subject and those who have the potential to teach as identified by the department will be part of the study.

In another study on the assessment of the research skills of selected DepEd teachers in Metro Manila, Lavidia et al. (2018) revealed that the teachers in the basic education level are identified as beginners or limited in terms of their research profile such as years of experience in research production, presentation and

publication and the number of produced, presented, published, and works cited. However, in general, the respondent's demographic and research profiles were found to be of no relevance to the research skills and techniques, research management, and knowledge of research management of the teachers. Generally, the teachers demonstrated limited research skills and techniques such as recognition and validation of problems. They were considered "beginners" only in terms of understanding relevant research methodologies and techniques and their appropriate application within one's research field. Further, the study showed that they got the lowest rating on the ability to critically analyze and evaluate one's findings.

Similarly, Ulla and Acompanado (2017) reported the perceptions, motivations, challenges, and needs of 50 teachers in Agusan del Norte regarding doing research. The data collection used survey questionnaires and group and individual interviews. Findings revealed that teacher respondents had a positive perception of doing research and its benefits to their teaching practices and students' learning processes. However, reported challenges such as lack of research knowledge skills, heavy teaching loads and lack of financial support from the schools obstructed them from doing research. Lastly, and which is very important in the findings, attending and participating in research trainings, receiving research incentives, and having a lighter teaching timetable were what the teachers perceived they need to embrace research in their areas.

Evidently, the foregoing studies reveal the fact that DepEd teachers may not be fully equipped with the rudiments of research. Further training as revealed in the study is needed to enhance teachers' capabilities. Effective training should be determined to effectively engage teachers to do and review research (Ulla et al., 2017). Moreover, according to Ulla, collaboration is a concept that should be emphasized because it can increase concrete and real results. Fowler et al. (n.d.) also highlighted the importance of inter-institutional collaboration to promote capacity across the academic discipline by saying that the development of engagement with, and investment in inter-institutional, inter-project communities is imperative to the effective building of research capacity.

Evidently, the end goal of this study is to collaborate with the Department of Education through extension activities that would further address the problems of teachers in terms of their research capabilities.

RESEARCH METHODOLOGY

The study follows the quantitative research method, specifically descriptive evaluative research. This design is to carefully appraise the worthiness of the current study. Evaluation research can be defined as a type of study that uses standard social research methods for evaluative purposes, as a specific research methodology, and as an assessment process that employs special techniques unique to the evaluation of social programs (Powell, 2006). As such, this method is mostly applicable to the present conduct of the study as it tries to evaluate the research capability of the teachers that would eventually lead to a proposed extension program for the university. Further, on its qualitative side, teachers were interviewed about the problems they encountered in teaching Research as a subject.

The study included two (2) DepEd schools in the City of Balanga that have

junior and senior high school students namely: the City of Balanga National High School and the Bataan National High School. The study utilized the purposive sampling technique which has been used through the years (Campbell, 1955) to include sampling informants with a specific type of knowledge and skills. The purposive sampling technique is a type of non-probability sampling that is most effective when one needs to study a certain cultural domain with knowledgeable experts within (Tongco, 2007). In both schools, all teachers who are teaching research at the junior and senior levels in the different strands were included as part of the study. Table 1 shows the respondents of the study.

Table 1

Population and Sample of DepEd Teachers

School	Teacher Respondents						Total
	Junior High School (JHS)			Senior High School (SHS)			
	Population	Sample	%	Population	Sample	%	
City of Balanga National High School (COBNHS)	85	6	7	24	4	17	4
Bataan National High School (BNHS)	216	4	1.85	98	7	7.14	17
Total	310	10	4.62	122	11	9	21

The study made use of the input-process-output or IPO model. Teachers' profiles such as age, gender, educational qualification, teaching experience, and a number of seminars and training attended in research served as the input together with their research capability categorized into the different components of the research process: fundamentals of research, proposal writing, conducting the research, use of statistical tools, analysis and interpretation of data, conclusion, and recommendation, report writing, thesis advising, and expertise in an oral examination. These variables were the content of the survey questionnaire that served as the main instrument of the study to gather data. Interviews were conducted to identify the problems met by the teachers while teaching the subject.

A letter of intent addressed to the current Superintendent of the Department of Education in the City of Balanga allowing the researcher to conduct the study and for future collaboration was made as an initial attempt for an extension activity. After the letter has been approved, the researchers distributed the survey questionnaire via email in Google form.

Data were retrieved, tabulated, interpreted, and analyzed. Descriptive statistics such as frequency, percentage, and mean were used to describe the data. Analysis of Variance was employed to test whether there is any significant difference in the research capability of teachers when grouped according to their profile.

RESEARCH FINDINGS

This section presents the results of the analysis and interpretation of data relevant to the study on the research capability of DepEd teachers in the area of instruction as a basis for the proposed extension program of the Bataan Peninsula State University, Main Campus during SY 2019-2020.

Part 1 reflects the profile of the teachers in terms of age, gender, educational qualification, teaching experience, and the number of seminars and trainings attended in research. Part 2 deals with the research capability of the teachers in terms of the different components of research and its development. Part 3 determines if there is any significant difference in the research capability of teachers when grouped according to their profile. Part 4 identifies

the problems encountered by the teachers while teaching research.

Part 1. Profile of the Teachers

Table 2 presents the profile of the teachers in terms of age, gender, educational qualification, teaching experience, and the number of seminars and training attended in research.

Table 2. Teachers' Profile

Profile	Freq.	%	Profile	Freq.	%
Age			Sex		
26 - 29	2	9.5	Male	7	33.3
30 - 39	11	52.4	Female	14	66.7
40 - 49	2	9.5	Year of Teaching Research		
50 - 59	5	23.8	None	3	14.3
60 and Above	1	4.8	1 - 2 Years	5	23.8
Highest Educational Attainm			3 - 4 Years	9	42.9
Bachelor's Degree	2	9.5	5 Years or more	4	19.0
With MS/MA Units	4	19.0	No. of Seminars/Trainings		
Master's Degree	9	42.9	None	2	9.5
With PhD/EdD Units	5	23.8	1 - 4	13	61.9
PhD/EdD Degree	1	4.8	5 or More	6	28.6
	21		**Total**	**21**	**100.0**

As shown in Table 2, the teachers represent different age groups ranging from the 20's to 60's or more. Over 52% are 30 to 39 years old, about 10% are in their 20s, 10% in their 40s, and about 28% are 50 years old or older. In terms of sex, the respondents consist of 67% females and 33% males.

With respect to the highest educational attainment, about 29% are with most units in master's degree programs. About 43% have completed their master's degree programs, while about 28% have Ph.D./EdD units or degrees. This confirms the result of the study of Estacio, Barcelona, and Mejia (2018) that schools preferred to hire teachers in research who hold master's degrees, but even so, there was no prescription for either area of specialization.

In terms of years of teaching research, three (3) of the 21 respondents revealed that they have not yet at most one (1) year of teaching this course. About 24% or 5 out of the 21 teachers have one (1) to two (2) years of teaching research experience, while 43% with three (3) to four (4) years. Four (4) or 19% of the respondents have been teaching research for five (5) years or more.

Although the majority of the teachers have research teaching experience of 3 to 4 years, these are not still considered at the level of seasoned research teachers. This agrees with the study of Lavidia et al. (2018) that most research teachers at the basic education level are identified as beginners or limited in terms of years of teaching experience.

With regards to seminars and trainings, two (2) of the 21 respondents claimed that they had not attended one. About 62% of them have one (1) to four (4) seminars and/or trainings, while 29% with five (5) or more participation in such activities. The study of Ulla and Acompanado (2017) confirms this result as reported challenges in research teaching in basic education, the lack of quality training for teachers.

Part 2. Research Capability of Teachers

Table 3 presents the research capability of teachers based on their self-perceived level of knowledge on basic research.

Table 3. Teachers' Level of Knowledge on Basic Research

Scale of Means	*Level of research knowledge*	*Implication*
4.50 – 5.00	*with very functional knowledge which makes me confident enough to write this part of the research and at the same time teach it to my colleagues and act as a member of the panel in research colloquia*	*Excellent*
3.50 – 4.49	*with working and functional knowledge which makes me confident to write this part of the research*	*Very Good*
2.50 – 3.49	*with some knowledge but needs further training*	*Good*
1.50 – 2.49	*a little knowledge but not functional*	*Poor*
1.00 – 1.49	*no knowledge at all*	*Very Poor*

Evidently, the teachers claimed that they have a very good level of research capability in terms of basic research, as indicated by the mean ratings of the criteria shown in Table 3, as well as the composite mean of 3.89 with a standard deviation of 0.37. The respondents are most knowledgeable on the purpose of research as suggested by the highest mean of 4.00 with a standard deviation of 0.55. Each of the other items has the same mean rating of

3.86, which suggests that the respondents, on average, have working and functional knowledge, which makes them confident to write about these aspects of research. This high perception in terms of research capability reflected by the teachers can be linked to the positive perception of the teachers towards doing research as stated by Ulla and Acompanado (2017). Correspondingly, this positive perception can be specifically determined in the result from Tables 4, 5, 6,7,8, and 9.

Table 4 shows the research capability of teachers based on their self-reported level of knowledge in research proposal writing.

Table 4. Teachers' Level of Knowledge on Research Proposal Writing

Criterion	Mean	SD	Remarks
1. Writing the introduction	4.00	.55	Very Good
2. Writing the background of the study	4.05	.59	Very Good
3. Formulating the statement of the problem	3.95	.50	Very Good
4. Identifying Relevant Theories	3.90	.54	Very Good
5. Identifying sources of related literature and studies	3.90	.54	Very Good
6. Writing and organizing literature and studies	3.90	.62	Very Good
7. Writing the conceptual/theoretical framework	3.86	.48	Very Good
8. Formulating the hypothesis (ses)	3.86	.48	Very Good
9. Defining the terms operationally and as measured in the study	3.95	.59	Very Good
10. Constructing questionnaire	3.86	.48	Very Good
Overall	**3.92**	**.47**	**Very Good**

With respect to writing research proposals, the teachers, on average, are confident of their working and functional knowledge on this aspect, as suggested by the composite mean of 3.92 with a standard deviation of 3.92. The teachers are most confident in their knowledge of writing the background of the study with a mean of 4.05 and a standard deviation of 0.59. This highest area is followed by 'writing the Introduction' with a mean of 4.00 (with a standard deviation of 0.55).

On the other hand, the teachers have the lowest working and functional knowledge of writing the conceptual/theoretical framework and constructing questionnaires, but these are the skills with respect to writing proposals.

Table 5 reflects the research capability of teachers in conducting research based on their self-reported level of knowledge in this area.

Table 5. Teachers' Level of Knowledge on Conducting Research

Criterion	Mean	SD	Remarks
1. Coordinating with proper authorities re: the research	3.90	.54	Very Good
2. Administering questionnaires	4.00	.63	Very Good
3. Validating and checking the Reliability of the questionnaire	3.71	.64	Very Good
4. Collating data to make it ready for analysis	3.95	.50	Very Good
Composite	**3.89**	**.51**	**Very Good**

As shown in Table 5, the teachers believed that they have very good knowledge and skills in conducting research, as indicated by the composite mean of 3.89 with a standard deviation of 0.51. They provided the highest mean of 4.00 (with a standard deviation of 0.63) on administering questionnaires and then on collating data to make it ready for analysis with a mean of 3.95 (with a standard deviation of 0.50).

On the other hand, the respondents provided the lowest mean of 3.71 (with a standard deviation of 0.64) in validating and checking the reliability of the questionnaire.

Table 6 reveals the research capability of teachers in using statistical tools based on their self-perceived level of knowledge in this area.

Table 6. Teachers' Level of Knowledge on Using Statistical Tools

Criterion	Mean	SD	Remarks
1. Determining the appropriate statistical tool to use	3.57	.68	Very Good
2. Computing statistics manually for a research	3.57	.60	Very Good
3. Computing statistics using statistical software	3.43	.81	Good
Composite	**3.52**	**.63**	**Very Good**

With respect to using statistical tools, the teachers considered themselves very good, as indicated by the composite mean of 3.52 with a standard deviation of 0.63. They believed that they have working and functional knowledge of using statistical tools, which makes them confident in how to determine the appropriate statistical tool to use and compute statistics manually for research. However, they are less confident

in computing statistics using statistical software, as suggested by their mean rating of 3.42 with a standard deviation of 0.81. They suggested that they need training in this area.

Table 7 reflects the research capability of teachers in analyzing and interpreting data based on their self-perceived level of knowledge in this area.

Table 7. Teachers' Level of Knowledge on Analyzing and Interpreting Data

Criterion	Mean	SD	Remarks
1. Using appropriate terms for data presentation	3.71	.56	Very Good
2. Using appropriate terms for data analysis and interpretation	3.76	.62	Very Good
3. Correlate literature to affirm/contradict results	3.76	.62	Very Good
Composite	**3.75**	**.57**	**Very Good**

As gleaned from Table 7, the teachers perceived that they have a very good knowledge of analyzing and interpreting data. Specifically, they are most confident in using appropriate terms for data analysis and interpretation and correlating literature to affirm or contradict results. The teachers provided their lowest mean rating of 3.71 in using appropriate terms for data presentation.

Table 8 reflects the research capability of teachers in writing conclusions and recommendations based on their self-perceived level of knowledge in this area.

Table 8. Teachers' Level of Knowledge on Writing Conclusion and Recommendation

Criterion	Mean	SD	Remarks
1. Writing appropriate conclusion citing new contributions to the body of knowledge	3.90	.44	Very Good
2. Proposing recommendations based on the results and findings	3.95	.50	Very Good
Composite	**3.93**	**.46**	**Very Good**

Table 9 reflects the research capability of teachers in research report writing based on their self-perceived level of knowledge in this area.

Table 9. Teachers' Level of Knowledge on Research Report Writing

Criterion	Mean	SD	Remarks
1. Technicalities of research report writing	3.86	.36	Very Good
2. Sequencing of the sub-topics and topics	3.86	.36	Very Good
Composite	**3.86**	**.36**	**Very Good**

In terms of research report writing, the respondents provided a composite mean of 3.86, suggesting that they consider themselves very good in this area. They are confident with their knowledge and skills in writing research reports. They thought themselves working and functional knowledge in the technicalities of research report writing and sequencing of the sub-topics and topics of research.

Table 10 presents the research capability of teachers in thesis advising based on their self-perceived level of knowledge in this area.

Table 10. Teachers' Level of Knowledge on Thesis Advising

Criterion	Mean	SD	Remarks
1. Awareness of the responsibilities as thesis adviser	3.33	.86	Good
2. Thesis advising techniques and rules	3.24	.83	Good
Composite	**3.29**	**.83**	**Good**

Concerning thesis advising, the respondents considered themselves good in this area. This self-perception is manifested by the composite mean of 3.29 and the mean ratings for the two (2) criteria. They reported having some knowledge but need further training in awareness of the responsibilities of the thesis adviser and thesis advising techniques and rules.

Table 11 displays the research capability of teachers in paneling in oral thesis examinations based on their self-perceived level of knowledge in this area.

Table 11. Teachers' Level of Knowledge on Paneling in Thesis Oral Examination

Criteria	Mean	SD	Remarks
1. Criteria for evaluating a research report	3.67	.48	Very Good
2. Paneling dos and don'ts	3.62	.50	Very Good
Composite	**3.64**	**.48**	**Very Good**

As reflected in Table 11, the teachers believed that they have very good knowledge of paneling in thesis oral examination. They are confident in their capabilities how to engage in paneling in thesis oral examination. They have a working and functional knowledge of the

criteria for evaluating a research report and the dos and don'ts of paneling.

Table 12 summarizes the research capability of teachers based on their self-perceived level of knowledge on various components of research.

Table 12. Summary of Self-Perceived Level of Knowledge in Research

AREAS	Mean	SD	Descriptive Equivalent
1. Basic Research	3.89	.37	Very Good
2. Research Proposal Writing	3.92	.47	Very Good
3. Conducting Research Paper	3.89	.51	Very Good
4. Use of Statistical Tools	3.52	.63	Very Good
5. Analysis and Interpretation of Data	3.75	.57	Very Good
6. Conclusion and Recommendation	3.93	.46	Very Good
7. Research Report Writing	3.86	.36	Very Good
8. Thesis Advising	3.29	.83	Good
9. Paneling in Thesis Oral Examination	3.64	.48	Very Good
Overall	**3.74**	**.37**	**Very Good**

Overall, the teachers have a very good level of research capability, as suggested by the overall mean of 3.74 with a standard deviation of 0.37. They believed, in general, they have working and functional research knowledge, which makes them confident in completing their research papers.

Specifically, the teachers are most confident in writing conclusions and recommendations with the highest mean of 3.93 (with a standard deviation of 0.46). This area is followed by writing a research proposal with a mean of 3.92 (and a standard deviation of 0.47).

On the other hand, the teachers manifested the need for training in thesis advising having the lowest mean of 3.29, which indicated a good rating. This lowest mean is followed by the use of statistical tools with a mean of 3.52.

Part 3. Profile and Research Capability of Teachers

Table 13 compares the research capability of teachers when they are grouped according to their age using the Mann-Whitney U Test. This non-parametric test was used instead of the Independent Samples T-test as its normality assumption was not met.

Table 13. Research Capability of Teachers Grouped According to Age

Research		Descriptives	Kruskal Wallis Test

component	Educational Attainment Grouping	N	Mean	SD	Chi-Square	df	Asymp Sig.	Remarks
Basic Research	BS Degree/MS/MA Units	6	3.97	.39	1.954	2	.376	No significant Difference; Do not reject Ho
	MS/MA Degree	9	4.00	.00				
	PhD/EdD Units/Degree	6	3.63	.53				
Proposal Writing	BS Degree/MS/MA Units	6	3.97	.57	3.069	2	.216	No significant Difference; Do not reject Ho
	MS/MA Degree	9	4.04	.17				
	PhD/EdD Units/Degree	6	3.70	.64				
Conducting Research	BS Degree/MS/MA Units	6	3.83	.49	2.646	2	.266	No significant Difference; Do not reject Ho
	MS/MA Degree	9	4.11	.47				
	PhD/EdD Units/Degree	6	3.63	.52				
Use of Statistical Tools	BS Degree/MS/MA Units	6	3.61	.49	.347	2	.841	No significant Difference; Do not reject Ho
	MS/MA Degree	9	3.52	.82				
	PhD/EdD Units/Degree	6	3.44	.50				
Analysis and Interpretation of Data	BS Degree/MS/MA Units	6	3.83	.41	.458	2	.795	No significant Difference; Do not reject Ho
	MS/MA Degree	9	3.74	.70				
	PhD/EdD Units/Degree	6	3.67	.56				
Conclusions and Recommendations	BS Degree/MS/MA Units	6	4.00	.63	.613	2	.736	No significant Difference; Do not reject Ho
	MS/MA Degree	9	4.00	.00				
	PhD/EdD Units/Degree	6	3.75	.61				
Report Writing	BS Degree/MS/MA Units	6	3.83	.41	3.148	2	.207	No significant Difference; Do not reject Ho
	MS/MA Degree	9	4.00	.00				
	PhD/EdD Units/Degree	6	3.67	.52				
Thesis Advising	BS Degree/MS/MA Units	6	3.00	.89	1.036	2	.596	No significant Difference; Do not reject Ho
	MS/MA Degree	9	3.33	.97				
	PhD/EdD Units/Degree	6	3.50	.55				
Panelling	BS Degree/MS/MA Units	6	3.83	.41	1.552	2	.460	No significant Difference; Do not reject Ho
	MS/MA Degree	9	3.61	.49				
	PhD/EdD Units/Degree	6	3.50	.55				
Overall	BS Degree/MS/MA Units	6	3.76	.37	.561	2	.755	No significant Difference; Do not reject Ho
	MS/MA Degree	9	3.82	.28				
	PhD/EdD Units/Degree		.61	51				

Overall, it can be noticed that the research capabilities of teachers when grouped according to highest educational attainment somewhat differ as directly inspected.

However, using Kruskal Wallis Test, no significant differences can be noted based on the data. Thus, the null hypothesis of no mean difference is not rejected. This result is similar for each of the comparisons across different research components.

Table 16 compares the research capability of teachers when they are grouped according to their years of teaching using Mann-Whitney U Test. This non-parametric test was used instead of the Independent Samples T-test as its normality assumption was not met.

Table 16. Research Capability of Teachers Grouped According to Years of Teaching Research

Research component	Years of Teaching Research	Descriptives			Mann-Whitney U		
		N	Mean	SD	U	Sig.	Remarks
Basic Research	2 Years or less	8	3.78	.38	36.000	.167	No significant Difference;
	3 Years or more	13	3.95	.36			Do not reject Ho
Proposal Writing	2 Years or less	8	3.78	.48	46.000	.638	No significant Difference;

	3 Years or more	13	4.02	.45			Do not reject Ho
Conduct Research	2 Years or less	8	3.81	.58	49.000	.822	No significant Difference;
	3 Years or more	13	3.94	.48			Do not reject Ho
Statistical Use	2 Years or less	8	3.58	.66	49.000	.815	No significant Difference;
	3 Years or more	13	3.49	.63			Do not reject Ho
Analyze Data	2 Years or less	8	3.54	.80	43.500	.480	No significant Difference;
	3 Years or more	13	3.87	.35			Do not reject Ho
Conclusions and Recommendations	2 Years or less	8	3.75	.46	37.000	.145	No significant Difference;
	3 Years or more	13	4.04	.43			Do not reject Ho
Report Writing	2 Years or less	8	3.75	.46	43.000	.283	No significant Difference;
	3 Years or more	13	3.92	.28			Do not reject Ho
Thesis Advising	2 Years or less	8	3.25	.85	50.000	.878	No significant Difference;
	3 Years or more	13	3.31	.85			Do not reject Ho
Panelling	2 Years or less	8	3.50	.53	40.000	.308	No significant Difference;
	3 Years or more	13	3.73	.44			Do not reject Ho
Overall	2 Years or less	8	3.64	.43	39.500	.364	No significant Difference;
	3 Years or more	13	3.81	.34			Do not reject Ho

Direct inspection of the mean ratings indicates a comparable level of research capabilities of teachers with years or less experience in teaching research and those with three years or more. Both groups have a very good level of research capabilities in general. This observation is marked with the overall mean of 3.64 (with a standard deviation of 0.43) of teachers with two (2) years or less experience compared with that of teachers with three (3) years or more (mean=3.81, standard deviation= 0.34). It is noted, however, that both groups have a good level of thesis advising research capabilities. Teachers with two (2) years or less experience provided a mean of 3.25 (with a standard deviation of 0.85) on thesis advising, while those with more experience gave a mean of 3.31 (with a standard deviation of 0.85).

Using the Mann-Whitney U Test, it was found that there is no significant difference between the teachers with two (2) years or less experience when compared to those with three (3) years or more time teaching research. This result is evident in all areas of comparison shown in Table 16. Thus, the null hypotheses of no mean differences are not rejected.

Table 17 compares the research capability of teachers when they are grouped according to no. of seminars and trainings attended using Mann-Whitney U Test. This non-parametric test was used instead of the Independent Samples T-test as its normality assumption was not met.

Table 17. Research Capability of Teachers Grouped According to No. of Seminars and Trainings Attended

Research component	No. of seminars/ trainings	Descriptives			Mann-Whitney U		
		N	Mean	SD	U	Sig.	Remarks
Basic Research	<3	13	3.83	.45	41.000	.342	No significant Difference;
	≥3	8	3.98	.17			Do not reject Ho
Proposal Writing	<3	13	3.86	.55	50.500	.906	No significant Difference;
	≥3	8	4.03	.30			Do not reject Ho
Conduct Research	<3	13	3.90	.63	47.500	.735	No significant Difference;
	≥3	8	3.88	.23			Do not reject Ho
Statistical Use	<3	13	3.51	.73	49.500	.846	No significant Difference;
	≥3	8	3.54	.47			Do not reject Ho
Analyze Data	<3	13	3.59	.67	35.500	.171	No significant Difference;
	≥3	8	4.00	.18			Do not reject Ho
Conclusions and Recommendations	<3	13	3.85	.55	39.500	.225	No significant Difference;
	≥3	8	4.06	.18			Do not reject Ho
Report Writing	<3	13	3.77	.44	40.000	.152	No significant Difference;
	≥3	8	4.00	.00			Do not reject Ho
Thesis Advising	<3	13	3.23	.81	46.500	.673	No significant Difference;
	≥3	8	3.38	.92			Do not reject Ho
Panelling	<3	13	3.58	.49	42.000	.396	No significant Difference;
	≥3	8	3.75	.46			Do not reject Ho
Overall	<3	13	3.68	.44	43.000	.513	No significant Difference;
	≥3	8	3.84	.23			Do not reject Ho

Direct inspection of the mean ratings indicates almost the same level of research capabilities of teachers when grouped according to the number of seminars and training. Both groups have a very good level of research capabilities in general. Teachers with less than three (3) seminars/trainings have an overall mean of 3.68 (with a standard deviation of 0.44), while those with three (3) or more have 3.84 with a standard deviation of 0.23).

However, it is noted that both groups only have a good level of thesis advising research capabilities. Teachers with less number of seminars/trainings provided a mean of 3.23 (with a standard deviation of 0.81) on thesis advising, while those with more seminars/trainings gave a mean of 3.38 (with a standard deviation of 0.92).

Using the Mann-Whitney U Test, it was found that there is no significant difference between the teachers with less than three (3) seminars/trainings when compared to those with three (3) or more. This result is evident in all areas of comparison shown in Table 17. Thus, the null hypotheses of no mean differences are not rejected.

Considering the results of the comparison of research capabilities on

different profile variables, it can be deduced that training or enhancement of research knowledge and skills can be done uniformly, regardless of profiles.

Part 4. Problems Encountered by Teachers While Teaching Research

In order to determine the problems encountered by the teachers while teaching research, in-depth interviews were conducted with five (5) teachers teaching at Bataan National High School and the City of Balanga High School.

The study generalized three themes: 1) limited resources (due to the pandemic), 2) the writing capabilities of students, and 3) difficulty following instructions and understanding parts of the research process.

The first theme was experienced by some students. According to Teacher A, the issue of the pandemic results in limited access to resources as compared to the times when students can easily approach their teachers about their problems, accessing the information on how they can best find materials for the conduct of research. Teacher B, on the other hand, added that even before the pandemic times, teachers are challenged with references, only utilizing those that were in the curriculum. This observation was evident in the study of Bala (2017) and Boncoan (2012), that the persistent problems met in connection with the implementation of the new curriculum are insufficient instructional materials and teachers' manuals.

The writing capabilities of students (theme 2) was also mentioned as a problem specifically in constructing sentences and paragraphs which resulted in copy-paste method based on online references which violate ethical consideration in research. Teacher D inquired about how students can cope with the complexities of the research process up to the completion of the entire research output. It was also emphasized that there was also a problem in the coherency of ideas. This result can be attributed to the complexity of research that the majority of high school students cannot comprehend, this is reflected in the study of Padolina as reported by Fajarda (2014) that many of the subjects like Qualitative Research and Quantitative Research "sounded very HEI" – like belonging to the college or even graduate school education rather than to basic education. It can be deemed that many of the students cannot comprehend the context of research or are not yet ready to accept the challenges and responsibility that comes with doing research.

For the theme about the difficulty in following instructions and understanding certain parts of the research process, Teacher C quoted that some students do not know how to follow instructions, and the sequence of the content presented was not in order even though the format in writing research was already given. Added to this, research questions cannot be fully answered and still lack the art of stating and restructuring the questions. It was also noted that there was a problem when it comes to the analysis and interpretation of data in quantitative and qualitative data. It was also mentioned that confusion occurs when it comes to the validation process which should be conducted by students. The statistical part for quantitative data, the gathering of review of related literature as well as the interpretation of both quantitative and qualitative data became problems. This result in some way proves the result of the study conducted by Estacio, Barcelona, and Mejia (2018) on the research capabilities of students in the senior high school department of a local university. The proponents observed that the student's research capabilities were only at the average level.

To sum up, other problems as cited by the teachers themselves:

1. References and resources are limited.

2. Experiences of the teachers and background knowledge may seem not enough.
3. Students cannot follow the format even if they are provided with ample samples.
4. Each teacher has his/her own way of teaching research and consequently, each has his/her own standards
5. Analysis of data and interpretation of results are some of the weaknesses of teachers handling research
6. Researchers' copy-paste behavior
7. Conceptual/Theoretical framework design and construction must also be updated since some previous knowledge appeared obsolete.
8. How can the teachers teach all the research concepts amidst the pandemic.

DISCUSSIONS

1. It is highly recommended that a tie-up with the university be made to assist teachers in the conduct of their duty in teaching the research subject. The quantitative results of the survey generally suggest that teachers are very capable of teaching the subject but the result of interviews made somehow might be a reflection of how the teachers teach the subject because some problems identified were in understanding the research process specifically in the areas of content presentation, answering the research questions, the analysis and interpretation of data, the validation process, the review of related literature and the use of appropriate statistical tools. These areas might be fully emphasized in the proposed extension program of the university to enlighten teachers on these areas and make it easier for them to facilitate the teaching of research.
2. Since the use of statistical software has been identified only as "good", the university as part of the extension program could provide a series of seminar workshops for the teachers regarding the use of SPSS software. In that way, teachers will be equipped with the necessary knowledge and skills in these areas.
3. The result of the study shows that teachers need assistance in terms of thesis advising. The programs intended for this may not be applicable only to those who are teaching the subject but to other teachers who could serve as advisers.
4. The conduct of this kind of study in the near future may be conducted qualitatively in order to capture the insights, thoughts, and feelings of the teachers to best identify the areas that need further assistance for instruction.

CONCLUSION

Overall, there is no significant difference in the research capabilities of teachers when grouped according to their characteristics. The self-perceived level of knowledge about the research process was very good in general. Some problems cited while teaching research include limited resources (due to the pandemic), the writing capabilities of students, and difficulty following instruction and understanding parts of the research process.

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