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| RESEARCH ARTICLE

Research Productivity among Secondary School Teachers in the Schools Division of Calbayog City, Philippines

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| ABSTRACT

This study aimed to assess the research productivity of public secondary school teachers in the Schools Division of Calbayog City, Philippines. The research design used was descriptive-assessment, which utilized a questionnaire to gather data on the teachers' profile and research productivity status. Statistical tools were applied to analyze and interpret the data. The study revealed that the public secondary school teachers in the Schools Division of Calbayog City were mostly middle-aged, female, married, and had a master's degree. They had been teaching for less than ten years, mostly handling MAKABAYAN subjects, attended only 4 to 5 days of training, and had a mean research involvement of 0.54 year. The research productivity of the respondents was found to be low, indicating minimal involvement in research activities. The study also found that research productivity was dependent on the teachers' sex, length of teaching experience, and number of relevant training attended. To improve research competence and productivity, the study suggested that teachers should undergo enhancement training in research.

| KEYWORDS

Research productivity, secondary school teachers, profile, research involvement

1. Introduction

Research is one of the fundamental aspects of learning institutions. It basically refers to the discovering of new knowledge from a series of procedures and methods. Educational institutions regard research as one of the core functions of teachers. Research provides opportunities for innovation that are instrumental in developing higher cognitive competencies and nurture creativity. It is vital that teachers exhibit research competencies and skills in the fulfillment of their educational endeavor since they are considered as the front liners in the educative process. Seemingly, research engagement is conceptualized as part of the teacher's role and active research engagement is likely to have better outcomes for their professional development (Firth, 2016).

The importance of research in advancing the knowledge society and the knowledge economy cannot be overstated. Institutions that provide conducive environments for high productivity will increase faculty productivity (Bland et al., 2006). Understanding faculty research performance is crucial for universities, as it enables them to optimize their intellectual property, support funding applications, and engage with businesses, organizations, and strategic partners (Esponilla, 2015). Research output in the form of journal articles, reports, monographs, and grants is tangible evidence of productivity (Blackburn & Lawrence, 1995) and is directly related to organizational effectiveness (Bean, 1982; Braskamp, 2005).

Moreover, research productivity of faculty is measured by research awards, publications, citations, degrees conferred, and credit hours that students complete under their guidance (Danchisko & Thomas, 2012). Low research productivity in the College of Dentistry was attributed to a lack of organizational support (Bay & Clerigo, 2013). Faculty members see research productivity as

crucial to their career advancement (Chen et al., 2010). There are various factors that can contribute to research productivity within the academic setting, according to studies conducted by Quimbo and Sulabo (2013) and Bland et al. (2005). As a result, Bland (2002) proposed that research productivity is optimal when the researcher possesses certain personal qualities and works in an environment that supports research, particularly under the guidance of a leader with effective leadership skills who uses an assertive-participatory management approach.

The Research Management Guidelines (RMG), established through DepEd Order No. 16 s. 2017, provide guidance on managing research initiatives at national, regional, schools division, and school levels. The RMG highlights the importance of support mechanisms, such as funding, partnerships, and capacity building. As a result, this study aimed to enhance the research productivity of secondary school teachers, which will serve as a basis for developing a research capability enhancement program. It will support the various research initiatives of the Department of Education, such as the Basic Education System Reform Agenda (BESRA) and the establishment of the Research, Innovation, and Policy Evaluation Secretariat (RIPES).

Thus, the purpose of this study was to evaluate the research productivity of public secondary school teachers in the Schools Division of Calbayog City. Specifically, this research aimed to: (1) describe the profile of the public secondary school teachers in terms of age, gender, marital status, educational background, department affiliation, years of teaching experience, length of research involvement, and relevant training attended; (2) determine the status of teacher productivity in terms of involvement in research-related activities such as seminars, workshops, training courses, conferences, ongoing research projects, completed unpublished research, poster presentations, oral presentations, and published research; and (3) investigate the relationships between the profile of secondary school teachers in the Schools Division of Calbayog City and their research productivity.

2. Methods

This descriptive research aimed to assess the research productivity of public secondary school teachers in the Schools Division of Calbayog City using an exploratory research design. Descriptive research seeks to characterize the distribution of one or more variables without making any causal or other hypotheses (Aggarwal & Ranganathan, 2019). The primary tool used in gathering relevant data was a researcher-made questionnaire and was validated by experts.

The study was conducted during the School Year 2017-2018 in the Schools Division of Calbayog City, Samar. It involved ten secondary schools namely Calbayog City National High School (CCNHS), San Policarpo National High School (SPNHS), Trinidad National High School (TriNHS), Rafael Lentejas Memorial School of Fisheries (RLMSF), San Joaquin National High School (SJNHS), Malaga National High School (MalNHS), Oquendo National High School (ONHS), Mag-ubay National High School (MagNHS), Tarabucan National High School (TarNHS), and Pilar National Agricultural High School (PNAHS).

The study used a universal sampling technique, and 480 public secondary school teachers teaching Language (Filipino and English), Mathematics, Science, and MAKABAYAN (Araling Panlipunan, TLE, MAPEH, Values Education) were included as respondents. Table 1 shows the distribution of the respondents:

Table 1
Number Distribution of the Respondents of the Study

School	Number of Teachers
Calbayog City National High School (CCNHS)	120
San Policarpo National High School (SPNHS)	72
Trinidad National High School (TriNHS)	45
Rafael Lentejas Memorial School of Fisheries (RLMSF)	46
San Joaquin National High School (SJNHS)	54
Malaga National High School (MalNHS)	34
Oquendo National High School (ONHS)	41
Mag-ubay National High School (MagNHS)	21
Tarabucan National High School (TarNHS)	27
Pilar National Agricultural High School (PNAHS)	20
TOTAL	480

Moreover, the researcher-made questionnaire was divided into two parts. Part I focused on describing the profile of public secondary school teachers in the Schools Division of Calbayog City, including age, gender, marital status, educational background, department affiliation, years of teaching experience, length of research involvement, and relevant training attended. Part II

contained questions regarding the teachers' research productivity, such as involvement in research-related activities like seminars, workshops, and conferences, ongoing and completed research projects, and published research.

The respondents' profile was described using frequency and percentage distributions for age, gender, marital status, educational background, department affiliation, years of teaching experience, length of research involvement, and relevant training attended. To describe the status of research productivity, frequency distribution was used. Pearson chi-square was employed to establish the degree of relationship between the teachers' profile and research productivity

3. Results and Discussion
3.1. Profile of the Public Secondary School Teachers in the Schools Division of Calbayog City
The relationship between the profile of the respondents, who are public secondary school teachers, and their level of productivity was examined. Table 2 presents and describes the variables included in the profile of the respondents, such as age, gender, marital status, educational background, department affiliation, years of teaching experience, length of research involvement, and relevant training attended.

Table 2.
Profile Distribution of the Respondents

PROFILE VARIABLE	CATEGORIES	FREQUENCY (N=136)	PERCENTAGE (%)
Age	30 and below	200	41.67
	31-50	249	51.88
	51 and above	31	6.46
Gender	Male	194	40.42
	Female	286	59.58
Marital Status	Single	198	41.25
	Married	280	58.33
	Others	2	0.42
Educational Background	Bachelor's Degree Holder	199	41.46
	With Master's Units	256	53.33
	Master's Degree Holder	24	5.00
Department Affiliation	MAKABAYAN	137	28.54
	Science	111	23.13
	Mathematics	102	21.25
	Language	130	27.08
Years of Teaching Experience	5 and below	288	60.00
	6-13	120	25.00
	14-21	39	8.13
	22-29	21	4.38
	30 and above	12	2.50
Length of Research Involvement (in years)	3 and above	35	7.29
	1-2	13	2.71
	None	432	90.00
Relevant Training Attended (in hours)	161 and above	44	9.17
	121-160	10	2.08
	81-120	43	8.96
	41-80	151	31.46
	None	232	48.33

Age: Out of the 480 public secondary school teachers, 249 (51.88%) were in the age bracket of 31-50, 200 (41.67%) were 30 and below, and 31 (6.46%) were 51 and above. The mean age of the public secondary school teachers was 34.44. Based on the data, it appears that most of the teachers who participated in the study were middle-aged. This suggests that they are in a suitable age range to effectively fulfill their duties and responsibilities, including conducting research.

Gender: The data show that the majority of the public secondary school teachers in the Schools Division of Calbayog City were female, with a frequency of 286 (59.58%), while 194 (40.42%) were male. This data highlights that there are more female teacher-respondents than male.

Marital Status: Based on this data, 280 (58.335%) were married, 198 (41.25%) were single, and only two (0.42%) were widows. These data suggest that most of the teachers already have families and may likely have children of their own. Since most of the respondents are in their middle age, they are now in Erik Erikson's Intimacy versus Isolation stage of psychosocial development, where they have explored relationships leading to longer-term commitments with someone other than a family member.

Educational Background: The data indicate that 256 (53.33%) of the teachers had master's units, 199 (41.46%) had bachelor's degrees, 24 (5%) had master's degrees, and only one (0.21%) had earned doctorate degree units. Consequently, these data imply that more teachers are pursuing their graduate studies by enrolling in graduate programs.

Department Affiliation: The figure shows that 137 (28.54%) of the respondents were affiliated with MAKABAYAN teaching, 130 (27.08%) were in Language teaching, 111 (23.13%) were teaching Science, and 102 (21.25%) were affiliated with Mathematics teaching. These data suggest that respondents from different subject areas were fairly distributed, but MAKABAYAN teachers were considered dominant, as it is a composite of different subject areas such as Social Studies, Technology and Livelihood Education (TLE), Values Education, and Music, Arts, Physical Education and Health (MAPEH). Language earned the second spot, as it is composed of subject areas such as English and Filipino. Science was in third place, and mathematics was in fourth.

Years of Teaching Experience: As reflected in the table, the majority of teacher-respondents (288 or 60%) had five or fewer years of teaching experience. Subsequently, there were 120 (25.00%) with teaching experience of 6-13 years, 39 (8.13%) with 14-21 years of service, 21 (4.38%) with 22-29 years of service, and 12 (2.50%) with 30 or more years of service. The data strongly indicate that the majority of respondents were relatively new to the teaching profession, having less than ten years of teaching experience. This trend may be attributed to the recent influx of new teachers who are specifically teaching senior high school.

Length of Research Involvement: The table reveals that the majority of teacher-respondents (432 or 90%) are not involved in research undertakings. Only 35 (7.29%) have been involved for 3 years or more, and 13 (2.71%) have been involved for 1-2 years. These statistics suggest that most of the teacher-respondents do not actively participate in research. In fact, the mean score for the length of research involvement is 0.54, indicating a lack of involvement among public secondary school teachers.

Relevant Training Attended: A significant number of teacher-respondents (232 or 48.33%) have not attended any relevant training, while 151 (31.46%) have attended 41-80 hours of relevant training. Additionally, 44 (9.17%) have attended 161 or more hours of training, 43 (8.96%) have attended 81-120 hours, and only 10 (2.08%) have attended 121-160 hours. The average score for the number of relevant trainings attended was found to be 34.60 hours, which is approximately equivalent to 4-5 days of training. These results indicate that teachers may need to participate in more relevant training opportunities to support their research endeavors.

3.2. Status of Research Productivity of Public Secondary School Teachers

Table 3 shows that the most prevalent form of research productivity of the public secondary school teachers is the involvement in research-related activity/es as to seminars/workshops/trainings with 134 as its frequency count. It is then followed by the involvement in research-related activity/es as to conferences (87) and short courses (50). It is also revealed that the public secondary school teachers have a number of on-going research projects (48), completed unpublished researches (32), presented researches in both oral (21) and poster (14), and published researches (3). Considering the total number of the respondents, the number distribution for each of the indicators of the status of research productivity is considered "very low". This meant that the public secondary school teacher-respondents had a minimal involvement in research undertakings. This data confirmed the findings about the profile of the respondents under the length of research involvement and the number of relevant trainings attended.

Table 3
Number Distribution on the Status of Research Productivity of Public Secondary School Teachers

STATUS OF RESEARCH PRODUCTIVITY	NUMBER OF INVOLVEMENT AND/OR RESEARCHES	NO RESPONSES	RANK
1. Involvement in research-related activity/es as to:			
1.1.Seminars/ Workshops/ Trainings	134	346	1
1.2 Short courses	50	430	3
1.3 Conferences	87	393	2
2. On-going research project/s	48	432	4
3. Completed unpublished research/es	32	448	5
4. Presented research/es as to:			
4.1 Poster presentation	14	466	7
4.2 Oral presentation	21	459	6
5. Published research/es	3	477	8

3.3. Relationship Between the Profile of Public Secondary School Teachers and their Research Productivity

To determine the relationship between the profile of public secondary school teachers and their research productivity, Pearson Chi-square test was used. Table 4 to Table 11 presented the results.

Table 4
Pearson Chi-Square Test Between Age and Research Productivity of Public Secondary School Teachers

Research Productivity	C	Inter.	x^2	df	p-value
1. Involvement in research-related activity/es as to:					
1.1.Seminars/ Workshops/ Trainings	0.393	LC	24.447^{ns}	28	0.658
1.2 Short courses	0.536	MC	20.124^{ns}	12	0.065
1.3 Conferences	0.328	LC	10.514^{ns}	15	0.786
2. On-going research project/s	0.147	NC	1.065^{ns}	3	0.785
3. Completed unpublished research/es	0.392	LC	5.812^{ns}	3	0.121
4. Presented research/es as to:					
4.1 Poster presentation	----	----	----	--	----
4.2 Oral presentation	0.271	LC	1.658^{ns}	3	0.646
5. Published research/es	---	---	----	--	-----

Legend: ns – Not Significant at .05 level

Age. Table 4 unveiled the result on the relationship between the age profile of the public secondary school teachers and their status of research productivity in terms of involvement in research-related activities as to seminars/workshops/training (x2 = 24.447, p = 0.658), short courses (x2 = 20.124, p = 0.065), conferences (x2 = 10.514, p = 0.786) showed low correlation, moderate correlation and low correlation respectively. While in terms of on-going research project/s (x2 = 1.065, p = 0.785) showed no correlation. There is a low correlation in both the completed unpublished researches (x2 = 5.812, p = 0.121) and presented researches as an oral presentation (x2 = 1.658, p = 0.646). Hence, the p-values of the age profile are greater than the p-value at 0.05 level of significance. This means that the age of the public secondary school teachers has significantly no correlation to their status of research productivity. Thus, the null hypothesis stating that there is no significant relationship between the age profile of the public secondary school teachers and their research productivity is not rejected.

Table 5
Pearson Chi-Square Test Between Gender and Research Productivity of Public Secondary School Teachers

Research Productivity	C	Inter.	x^2	df	p-value
1. Involvement in research-related activity/es as to:					
1.1.Seminars/ Workshops/ Trainings	0.348	LC	18.455*	7	0.010
1.2 Short courses	0.214	LC	2.395ns	4	0.663
1.3 Conferences	0.244	LC	5.493 ns	5	0.359
2. On-going research project/s	0.320	LC	5.470*	1	0.019
3. Completed unpublished research/es	0.141	NC	0.653 ns	1	0.419
4. Presented research/es as to:					
4.1 Poster presentation	---	----	---	---	---
4.2 Oral presentation	0.322	LC	2.432 ns	1	0.119
5. Published research/es	----	----	----	----	----

Legend: ns – Not Significant at .05 level
     * - Significant at .05 level (p<.05)

Gender. Table 5 revealed the result on the relationship between the gender profile of the public secondary school teachers and their level of research productivity in terms of involvement in research-related activities as to seminars/ workshops/ trainings ($x2$ = 18.455, p = 0.010), short courses ($x2$ = 2.395, p = 0.663), conferences ($x2$ = 5.493, p = 0.359); on-going research project/s ($x2$ = 5.470, p = 0.019) and presented researches as oral presentation ($x2$ = 2.432, p = 0.119) showed low correlation. Also, the completed unpublished researches ($x2$ = 0.653, p = 0.419) exhibited no correlation. This data tell that the sex of the public secondary school teachers has significantly no correlation to their status of research productivity. Therefore, the null hypothesis stating that there is no significant relationship between the sex profile of the public secondary school teachers and their research productivity is not rejected.

Table 6
Pearson Chi-Square Test Between Marital Status and Research Productivity of Public Secondary School Teachers

Research Productivity	C	Inter.	x^2	df	p-value
1. Involvement in research-related activity/es as to:					
1.1.Seminars/ Workshops/ Trainings	0.298	LC	13.059 ns	14	0.522
1.2 Short courses	0.284	LC	4.375 ns	4	0.358
1.3 Conferences	0.294	LC	8.217 ns	5	0.145
2. On-going research project/s	0.126	NC	0.772 ns	1	0.380
3. Completed unpublished research/es	0.108	NC	0.379 ns	1	0.538
4. Presented research/es as to:					
4.1 Poster presentation	----	---	---	---	----
4.2 Oral presentation	0.322	LC	2.432 ns	1	0.119
5. Published research/es	---	---	---	---	---

Legend: ns – Not Significant at .05 level

Marital Status. The result of the relationship between the civil status of the public secondary school teachers and their status of research productivity is presented in Table 6. The involvement in research-related activities as to seminars/workshops/trainings ($x2$ = 13.059, p = 0.522), short courses ($x2$ = 4.375, p = 0.358), conferences ($x2$ = 8.217, p = 0.145); and presented researches as an oral presentation ($x2$ = 2.432, p = 0.119) showed low correlation. Moreover, the on-going research project/s ($x2$ = 0.772, p = 0.380) and completed unpublished researches ($x2$ = 0.379, p = 0.538) displayed no correlation. The data signify that the civil status of the public secondary school teachers has significantly no correlation to their status of research productivity. Therefore, the null hypothesis stating that there is no significant relationship between the civil status of the public secondary school teachers and their research productivity is not rejected.

Table 7
Pearson Chi-Square Test Between Educational Background and
Research Productivity of Public Secondary School Teachers

Research Productivity	C	Inter.	x^2	df	p-value
1. Involvement in research-related activity/es as to:					
1.1.Seminars/ Workshops/ Trainings	.206	LC	5.921^{ns}	14	0.968
1.2 Short courses	.302	LC	5.006^{ns}	8	0.757
1.3 Conferences	.276	LC	7.169^{ns}	10	0.709
2. On-going research project/s	.143	NC	1.006^{ns}	2	0.605
3. Completed unpublished research/es	.195	NC	1.270^{ns}	2	0.530
4. Presented research/es as to:					
4.1 Poster presentation	---	---	---	---	---
4.2 Oral presentation	.224	LC	1.105^{ns}	2	0.575
5. Published research/es	---	--	---	---	---

Legend: ns – Not Significant at .05 level

Educational Background. Furthermore, Table 7 divulged the result on the relationship between the educational attainment of the public secondary school teachers and their status of research productivity. The involvement in research-related activities as to seminars/workshops/trainings (x2 = 5.921, p = 0.968), short courses (x2 = 5.006, p = 0.757), conferences (x2 = 7.169, p = 0.709); and presented researches as oral presentation (x2 = 1.105, p = 0.575) showed low correlation. Moreover, the on-going research project/s (x2 = 1.006, p = 0.605) and completed unpublished researches (x2 = 1.270, p = 0.530) displayed no correlation. The data indicate that the educational attainment of the public secondary school teachers has significantly no correlation to their status of research productivity. Therefore, the null hypothesis stating that there is no significant relationship between the educational attainment of the public secondary school teachers and their research productivity is not rejected.

Table 8
Pearson Chi-Square Test Between Department Affiliation and
Research Productivity of Public Secondary School Teachers

Research Productivity	C	Inter.	x^2	df	p-value
1. Involvement in research-related activity/es as to:					
1.1.Seminars/ Workshops/ Trainings	0.437	MC	31.598^{ns}	21	0.064
1.2 Short courses	0.522	MC	18.725^{ns}	12	0.095
1.3 Conferences	0.358	LC	12.829^{ns}	15	0.615
2. On-going research project/s	0.215	LC	2.328^{ns}	3	0.507
3. Completed unpublished research/es	0.154	NC	0.775^{ns}	3	0.856
4. Presented research/es as to:					
4.1 Poster presentation	---	---	---	---	---
4.2 Oral presentation	0.219	LC	4.421^{ns}	3	0.219
5. Published research/es	---	---	---	---	---

Legend: ns – Not Significant at .05 level

Department Affiliation. Table 8 shows the result on the relationship between the departmental affiliation of the public secondary school teachers and their status of research productivity in terms of involvement in research-related activities as to seminars/workshops/trainings (x2 = 31.598, p = 0.064) and short courses (x2 = 18.725, p = 0.095) showed both moderate correlation. Besides, involvement in research-related activities as to conferences (x2 = 12.829, p = 0.615, on-going research project/s (x2 = 2.328, p = 0.507) and presented researches as an oral presentation (x2 = 4.421, p = 0.219) showed no correlation. The completed unpublished researches (x2 = 0.775, p = 0.856), on the other hand, indicated no correlation. Hence, the p-values of the departmental affiliation profile is greater than the p-value at 0.05 level of significance. This means that the departmental affiliation of the public secondary school teachers has no significant correlation to their status of research productivity. Thus, the null hypothesis stating that there is no significant relationship between the departmental affiliation of the public secondary school teachers and their research productivity is not rejected.

Table 9
Pearson Chi-Square Test Between Years of Teaching Experience and
Research Productivity of Public Secondary School Teachers

Research Productivity	C	Inter.	x^2	df	p-value
1. Involvement in research-related activity/es as to:					
1.1.Seminars/ Workshops/ Trainings	0.298	LC	13.107^{ns}	28	0.992
1.2 Short courses	0.721	HC	54.175^{**}	16	0.000
1.3 Conferences	0.415	MC	18.116^{ns}	20	0.580
2. On-going research project/s	0.371	LC	7.675^{ns}	4	0.104
3. Completed unpublished research/es	0.484	MC	9.765^{*}	4	0.045
4. Presented research/es as to:					
4.1 Poster presentation	---	---	---	---	---
4.2 Oral presentation	0.184	NC	0.737^{ns}	4	0.947
5. Published research/es	---	---	---	---	---

Legend: ns – Not Significant at .05 level
       * - Significant at .05 level (p<.05)
       **- Highly Significant at .05 level (p<.01)

Years of Teaching Experience. Table 9 shows the result on the relationship between the length of teaching experience of the public secondary school teachers and their status of research productivity. The involvement in research-related activities as to seminars/workshops/trainings (x2 = 13.107, p = 0.992), and on-going research project/s (x2 = 7.675, p = 0.104) showed a low correlation. Meanwhile, the presented researches as an oral presentation (x2 = 0.737, p = 0.947) exhibited no correlation and the involvement in research-related activities as to conferences (x2 = 18.116, p = 0.104) has moderate correlation. Yet, the p-values of the above stated indicators for research productivity is greater than the p-value at 0.05 level of significance. Therefore, it can be gleaned that there is no significant correlation on the length of teaching experience and the above stated indicators for research productivity. However, it is evident in the table that the involvement in research-related activities as to short courses (x2 = 54.175, p = 0.000) and completed unpublished researches (x2 = 9.765, p = 0.045) showed high and moderate correlation respectively and the obtained p-value to lower than the p-value at 0.05 level of significance. Thus, the involvement in research-related activities as to short courses and completed unpublished researches as indicators of research productivity are significantly related to the length of teaching experience. This means that the research productivity in terms of the involvement in research-related activities as to short courses and the completed, unpublished researches are dependent on the length of teaching experience.

Thus, the null hypothesis stating that there is no significant relationship between the length of teaching experience of the public secondary school teachers and their research productivity for the indicators, the involvement in research-related activities as to seminars/workshops/trainings, the involvement in research-related activities as to conferences, on-going research project/s, and presented researches as oral presentation is not rejected. Nevertheless, the null hypothesis stating that there is no significant relationship between the length of teaching experience of the public secondary school teachers and their research productivity for the indicators, the involvement in research-related activities as to short courses and the completed unpublished researches, is rejected.

Table 10
Pearson Chi-Square Test Between Length of Research Involvement and
Research Productivity of Public Secondary School Teachers

Research Productivity	C	Inter.	x^2	df	p-value
1. Involvement in research-related activity/es as to:					
1.1.Seminars/ Workshops/ Trainings	0.394	LC	24.557^{ns}	28	0.652
1.2 Short courses	0.515	MC	18.032^{ns}	12	0.115
1.3 Conferences	0.489	MC	27.377^{ns}	20	0.125
2. On-going research project/s	0.334	LC	6.046^{ns}	3	0.109
3. Completed unpublished research/es	0.422	MC	6.922^{ns}	4	0.140
4. Presented research/es as to:					
4.1 Poster presentation	---	---	---	---	---

4.2 Oral presentation	0.456	MC	5.526 ^{ns}	4	0.237
5. Published research/es	---	---	---	---	---

Legend: ns – Not Significant at .05 level

Length of Research Involvement. The result on the relationship between the length of research involvement of the public secondary school teachers and their status of research productivity is likewise presented in Table 10. The involvement in research-related activities as to seminars/workshops/trainings ($x2 = 24.557$, $p = 0.652$) and on-going research project/s ($x2 = 6.046$, $p = 0.109$) showed low correlation. In addition, research-related activities as to short courses ($x2 = 18.032$, $p = 0.115$) and conferences ($x2 = 27.377$, $p = 0.125$); completed unpublished researches ($x2 = 6.922$, $p = 0.140$); and presented researches as an oral presentation ($x2 = 5.526$, $p = 0.237$) revealed moderate or marked correlation. On the other hand, the p-values for the length of research involvement profile were found to be greater than the significance level of 0.05. This suggests that there is no significant correlation between the length of research involvement of public secondary school teachers and their research productivity. Therefore, we cannot reject the null hypothesis, which states that there is no significant relationship between the length of research involvement of public secondary school teachers and their research productivity.

Table 11
Pearson Chi-Square Test Between Relevant Training Attended and
Research Productivity of Public Secondary School Teachers

Research Productivity	C	Inter.	x^2	df	p-value
1. Involvement in research-related activity/es as to:					
1.1.Seminars/ Workshops/ Trainings	0.495	MC	29.549*	18	0.042
1.2 Short courses	0.652	MC	25.891*	12	0.011
1.3 Conferences	0.529	MC	24.857**	10	0.006
2. On-going research project/s	0.189	NC	1.330^{ns}	3	0.722
3. Completed unpublished research/es	0.454	MC	5.712 ^{ns}	3	0.127
4. Presented research/es as to:					
4.1 Poster presentation	---	---	---	---	---
4.2 Oral presentation	0.222	LC	.830 ^{ns}	3	0.842
5. Published research/es	---	---	---	---	---

Legend: ns – Not Significant at .05 level
*   * - Significant at .05 level (p<.05)*
*   **- Highly Significant at .05 level (p<.01)*

Relevant Training Attended. Table 11 presents the relationship between the number of relevant trainings attended of the public secondary school teachers and their status of research productivity. The on-going research project/s ($x2 = 1.330$, $p = 0.722$), completed unpublished researches ($x2 = 5.712$, $p = 0.127$) and presented researches as oral presentation ($x2 = 0.830$, $p = 0.842$) showed no correlation, moderate correlation and low correlation respectively. The p-values of the above stated indicators for research productivity is greater than the p-value at 0.05 level of significance, thus, it can be perceived that there is no significant correlation between the length of teaching experience and the above stated. However, the involvement in research-related activities as to seminars/workshops/trainings ($x2 = 29.549$, $p = 0.042$), short courses ($x2 = 25.891$, $p = 0.011$) and conferences ($x2 = 24.857$, $p = 0.006$) revealed moderate correlation and the obtained p-value to lower than the p-value at 0.05 level of significance. Thus, the involvement in research-related activities as to seminars/workshops/trainings, short courses, and conferences as indicators of research productivity are significantly related to the number of relevant trainings attended of the respondents. This means that the research productivity in terms of the involvement in research-related activities as to seminars/workshops/trainings, short courses, and conferences are dependent on the number of relevant trainings attended.

Consequently, the null hypothesis stating that there is no significant relationship between the number of relevant trainings attended by the public secondary school teachers and their research productivity for the indicators, on-going research project/s, presented researches as oral presentation and the completed unpublished researches is not rejected. Nonetheless, the null hypothesis stating that there is no significant relationship between the number of relevant trainings attended of the public secondary school teachers and their research productivity for the indicators, the involvement in research-related activities as to seminars/workshops/trainings, short courses, and conferences, is rejected.

4. Conclusion

The findings reveal that the public secondary school teachers in the Schools Division of Calbayog City are in their middle age, indicating that they are neither too old nor too young to undertake research activities. Moreover, a significant proportion of the respondents have pursued graduate studies, and the distribution of respondents across different subject areas is fairly even. However, the influx of new teachers teaching senior high school implies that the public secondary school teachers are relatively new in the teaching profession. While the teachers and their academic heads believe that they possess basic research skills, their involvement in research activities is minimal, as previously noted in the analysis of the length of research involvement. Interestingly, research productivity is influenced by sex, length of teaching experience, and a number of relevant trainings attended. Thus, it is evident that public secondary school teachers require more support and training to increase their research productivity.

5. Recommendations

Based on the findings of the study, several recommendations are proposed. Firstly, the school, district, and division offices should increase the frequency of training, seminars, conferences, and workshops for teachers. This will enable them to keep up-to-date with the latest developments in the field, such as the issuance of the Basic Education Research Agenda and the Basic Education Research Fund. These initiatives can improve the teachers' skills, especially in research, and help bridge their learning gaps.

Additionally, public secondary school teachers are encouraged to pursue professional development and advancement activities, such as enrolling in graduate studies or continuing their graduate studies, to enhance their competencies, specifically in research. It is also recommended that effective planning for the teachers' schedules be implemented by school heads, allowing adequate time and concentration for teachers to facilitate and conduct research work.

Furthermore, it is recommended that public school teachers, academic heads, and school heads collaborate closely to effectively carry out various research undertakings in schools, districts, and divisions. Assistance from state agencies, colleges, universities, and other research institutions can also be considered.

Finally, future researchers are encouraged to conduct further studies to identify the differences and relationships among the profile, research competence, and productivity of public elementary school teachers in the Schools Division of Calbayog City, as well as public secondary school teachers in other divisions and the private sector.

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References

[1] Aggarwal R. & Ranganathan, P. (2019). Study designs: Part 2 - Descriptive studies. *Perspect Clin Res, 10(1):34-36*. DOI:10.4103/picr.PICR_154_18; PMID: 30834206; PMCID: PMC6371702.

[2] Bay, B. & Clerigo, M. (2013). Factors Associated with Research Productivity among Oral Healthcare Educators in an Asian University. *International Education Studies, 6*(8). http://dx.doi.org/10.5539/ies.v6n8p124

[3] Bean, J. P. (1982). A causal model of faculty research productivity. *Journal paper presented at the Annual meeting of the American Educational Research Association* (New York, NY, March 19- 23). ERIC Document Reproduction Service No. ED216661.

[4] Blackburn, R. T., & Lawrence, J. H. (1995). Faculty at work: Motivation, expectation, satisfaction. Johns Hopkins University Press.

[5] Bland, C. J., Center, B. A., Finstad, D. A., Risbey, K. R., & Staples, J. (2006). The impact of appointment type on the productivity and commitment of full-time faculty in research and doctoral institutions. *Journal of Higher Education, 77*(1), 89-123. https://doi.org/10.1080/00221546.2006.11778920

[6] Bland, C. J., Center, B. A., Finstad, D. A., Risbey,K. R., & Staples, J. G. (2005). A theoretical, practical, predictive model of faculty and department research productivity. *Academic Medicine, 80*(3), 225-237.

[7] Bland, C.J.; Seaquist, E.; Pacala, J. T.; Center, B.; Finstad, D. (2002). One School's Strategy to Assess and Improve the Vitality of Its Faculty. *Academic Medicine 77*(5), pp 368-376.

[8] Braskamp, L. A. (2005). How college fosters faith development of students. Spirituality in Higher Education Newsletter.

[9] Chen, Y., Nixon, M. R., Gupta, A., & Hoshower, L. (2010). Research Productivity Of Accounting Faculty: An Exploratory Study. *American Journal of Business Education (AJBE), 3*(2), 101–115. https://doi.org/10.19030/ajbe.v3i2.389

[10] Danchisko, K., & Thomas, A. (2012). Assessing faculty research productivity at public research institutions. Washington, DC: Education Advisory Board. https://dc.etsu.edu/cgi/viewcontent.cgi?article=4401&context=etd

[11] DepEd Order No. 16, series of 2017. Research Management Guidelines. https://www.deped.gov.ph/wp-content/uploads/2017/03/DO_s2017_016.pdf

[12] Esponilla, F. D. II (2015). Motivators of research productivity level in the Technological University of the Philippines (TUP), Manila campus. International Conference on Management Science, Innovation, and Technology 2015, Faculty of Management Science, Suan Sunandha Rajabhat University. http://icmsit.ssru.ac.th/icmsit/fmsicmsit1/images/PDF/icmsit1.pdf

[13] Firth, J. (2016). Research engagement for the school teacher and its role in the education community. *Education in the North, 23*(2), 161-166. https://doi.org/10.26203/9n65-7362

[14] Quimbo, M. A. T., & Sulabo, E. C. (2014). Research productivity and its policy implications in higher education institutions.*Studies in Higher Education, 39(*10), 1955-1971.Retrieved from https://www.tandfonline.com/doi/abs/10.1080/03075079.2013.818639