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Research Article

Research Writing Competence of Master Teachers and School Heads and its Implications to Research Management

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ABSTRACT

This study assessed the research writing competence of master teachers and school heads through survey questionnaires and semi-structured interviews. Descriptive data analysis techniques, including frequency counts, percentage distributions, and means were utilized to summarize and interpret the data. The research productivity profile indicated a clear need for additional training to enhance the research skills and knowledge of the educators. A few number of respondents had not undergone research-related training from 2017 to 2021, and a small number had completed research studies, presented research findings at conferences, and published research articles. This highlights the need to improve research generation, dissemination, and publication skills. Regarding research writing competence, self-assessments varied by role and education level. Elementary level master teachers demonstrated moderate competence in writing research, while expressing limited familiarity with knowledge on research methodology. Junior High School (JHS) master teachers and school heads generally perceived themselves as highly competent in various research writing tasks. However, they continued to encounter challenges in certain areas. They displayed high competence in conducting quantitative and qualitative research and in making use of their ICT skills in research. Additionally, they demonstrated a strong understanding of research ethical principles and standards. Overall, the study identified areas for improvement, including connecting research findings with existing literature, establishing research gaps, and enhancing research dissemination and presentation skills. These findings inform the design of targeted training programs and interventions to address these specific areas of improvement among master teachers and school heads, leading to improved research management in schools.

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Background

The Department of Education (DepEd) in the Philippines launched the Sulong EduKalidad program in 2019 to enhance the quality of basic education in the country. This program recognizes the importance of strategic leadership and decision-making based on sound research, to actually determine and address the needs of the different delivery units in DepEd. In like manner, DepEd Memorandum No. 047, s. 2021 titled, "Research O'clock: Evidence in Learning Continuity", was institutionalized to promote research during the pandemic. It aims to strengthen the commitment of the school personnel to do research and document research-based practices in schools.

However, educators face challenges in conducting research, such as lack of time and limited knowledge and competence. The research productivity of master teachers and school heads remains low, and there is a need for guidance and support in research writing and management.

Master teachers and school heads play a crucial role in implementing research-based practices. To address these challenges and improve research competence, a professional development program can be developed based on the findings of this study. This program should focus on enhancing the research writing skills of educators and school leaders.

By expanding the research writing and management initiatives in schools, educators can contribute to improving the quality of education and adapt to the changing world. In doing so, this study determined the research writing competence of public elementary and JHS master teachers and school heads.

Research Questions

This study aimed to examine the research writing competence of master teachers and school heads. Specifically, it sought to answer the following research questions:

1. What is the research productivity profile of the master teachers and school heads in terms of:
   1.1 number of research-related training attended;
   2.1 number of research completed;
   3.1 number of research presented; and
   4.1 number of research published?
2. What is the level of research writing competence of master teachers and school heads in terms of:
   2.1. parts of a research paper;
   2.2. research approaches;
   2.3. research-related ICT skills; and
   2.4. research ethical principles and standards?
3. What are the problems encountered by master teachers and school heads in research writing?
4. What implications to research management can be drawn from the results?

Literature Review

Basic Education Research Agenda (BERA) in the Philippines

DepEd Order No. 39, s. 2016 titled, "The Adoption of the Basic Education Research Agenda" (BERA), supports research efforts among teachers and school heads in public schools. The BERA focuses on relevant research topics to address knowledge gaps and challenges in Philippine basic education. It aligns with DepEd's vision and mission to generate new knowledge, maximize research resources, and address important education issues and concerns.

The BERA consists of themes such as Teaching and Learning, Child Protection, Human Resource Development, and Governance. These themes are interconnected and cover various aspects of education, including teaching techniques, curriculum, learners, assessment, child safety, employee qualifications and well-being, and effective school management.

DepEd promotes the dissemination of research findings through publications and research conferences. The BERA is shared with

internal and external stakeholders to encourage engagement and collaboration. It guides them in conducting research to improve the quality of basic education. The department's Policy Research and Development (PRD) division analyzes research findings and provides recommendations for policy and program enhancements.

Overall, the BERA aims to enhance education through research, inform policy decisions, and provide insights and solutions to improve the Philippine education system.

Research Writing Competence of Master Teachers and School Heads

Research competence among educators is crucial as it enables them to address research problems effectively and engage in scientific research activities (Ivanenko et al., 2015). To develop research competence, several components such as motivational-value, methodological-reflexive, operational-activity, and emotional-volitional components as well as cognitive, motivation-goal, activity-evaluation, and communication components need to be considered. These components encompass knowledge, understanding, problem-solving abilities, motivation, emotional-volitional attitudes, and the application of research knowledge to practical problems (Yarullin & Tsyrkun, 2015).

Studies assessing the research competence of teachers have identified areas where improvement is needed. For instance, teachers often lack proficiency in locating resources, understanding research literature, and conducting literature reviews (Gomez & Panaligan, 2013). In addition, teachers may have insufficient research skills and confidence in gathering, analyzing, and understanding data (Efron & Ravid, 2020). These findings highlight the need for training programs to enhance teachers' research abilities and boost their confidence in conducting research.

The research productivity of teachers of DepEd-Schools Division of Ilocos Norte (SDOIN) has been found to be low, with a limited number of approved research projects completed by teachers in recent years (SDOIN, 2021). This indicates the importance of encouraging teachers to engage in research through training programs and addressing potential barriers. Factors such as teachers' unfamiliarity with research processes, grammar and sentence construction, research organization, and communication skills have been identified as hindrances to their research competence (Kho & Ling, 2017; Magpayo et al., 2015). Additionally, teachers' lack of confidence and flexibility in undertaking research activities further contribute to their avoidance of such endeavors (Magpayo et al., 2015).

Various factors influence teachers' research competence, including their educational attainment, seminar attendance, and research work (Atutubo & Estonanto, 2020). While many teachers have completed advanced education and attended seminars, only a few have actively participated in research projects, published research, or received research awards. The limited number of research publications among Filipino educators can be attributed to factors such as limited time, lack of training, fear of rejection, lack of enthusiasm, laziness, lack of funding, and lack of institutional support (Bueno & Basilio, 2019). Therefore, it is essential to address these barriers and create a supportive environment that enhance research activities.

School heads also play a crucial role in research writing and dissemination. Research serves as a source of knowledge, information, and innovation for national development (Anub, 2020). Studies suggest revising incentive rewards for school heads to include research writing and publication training for teachers. Teachers should develop advanced skills in gathering and evaluating data, designing research methods and instruments, selecting appropriate statistical tools, and preparing research articles for publication. Moreover, attitudes toward research, the application of research findings, and the reporting and publication of research should be improved through training programs and periodic reviews of their effectiveness (Bueno & Basilio, 2019).

As noted by Leshchenko (2021), the development of research competence of school heads requires certain prerequisites in today's advanced technological age. These include the

willingness and ability to conduct research activities, finding and selecting relevant information, transforming and storing data using digital technology, critically assessing data, and planning and executing scientific research using digital tools.

Ultimately, research competence is crucial for educators to effectively address research problems and engage in scientific research activities. By addressing areas of improvement, providing adequate training, and creating a supportive learning and work environment.

Methods

Research Design

This study utilized a descriptive research design employing survey methodology. It is descriptive in nature as it aims to systematically describe the respondents' research productivity profile, their level of research writing competence, and the challenges they encounter in research writing. Data were analyzed using frequency counts, percentages, and mean scores to provide a clear and detailed understanding of the variables under study.

Locale of the Study

This study was conducted in the Schools Division of Ilocos Norte (SDOIN), the largest schools division in the province. SDOIN was selected as the locale of the study because it employs the majority of public school master teachers and school heads in Ilocos Norte. Given its substantial number of respondents, SDOIN provides a representative population that is sufficient to capture an accurate picture of the actual level of research writing competence among master teachers and school heads.

Population and Sampling Procedure

The study involved a total of 306 respondents, comprising 142 elementary master teachers, 50 JHS master teachers, 89 elementary school heads, and 25 JHS school heads. Additionally, six master teachers and six school heads were randomly selected to participate in interviews. The master teacher respondents are holding Master Teacher I and II positions, while the school head respondents are occupying School Principal I to IV positions. Teachers designated as Officers-in-Charge (OICs) or Teachers-in-Charge (TICs) in public elementary and JHS levels were also considered school heads by virtue of their official assignments. These respondents were selected for their critical roles as instructional leaders, research advocates, and school administrators.

Research Instruments

The survey questionnaire used in the study titled, Research Writing Competence Survey Questionnaire was composed of three sections. The questionnaire was designed to capture the (a) research productivity profile, (b) level of research writing competence, and (c) problems encountered in research writing of the respondents.

The first section gathered data on the respondents' research productivity, including the number of research-related trainings attended, research studies completed, research outputs presented, and research works published from 2017 to 2021.

The second section measured the respondents' level of research writing competence through a 51-item questionnaire adapted from Anub (2020). The items were organized into four categories: the parts of a research paper, research approaches, research-related ICT skills, and ethical principles and standards.

The third section focused on identifying the problems encountered by the respondents in research writing. It included a 13-item checklist and an open-ended portion where respondents could describe additional challenges, concerns, or issues that may have affected their motivation and ability to carry out research-related tasks.

In addition to the survey, semi-structured interviews were conducted with selected participants using a validated interview protocol.

Data Gathering Procedure

The data gathering procedure followed a systematic and structured approach to ensure the integrity and reliability of the research process. It began with the validation and finalization of the survey questionnaire and interview protocol. The list of target respondents, including their names and school assignments, was obtained from the Research and Planning Unit of SDOIN.

Ethical clearance was secured from the University Research Ethics Review Board (URERB) of Mariano Marcos State University (MMSU). Formal approval to conduct the study was then obtained from the Schools Division Superintendent of SDOIN. Subsequently, permission was sought from the participating school heads and master teachers. Prior to the distribution of questionnaires, informed consent was obtained from all respondents, ensuring their voluntary participation and understanding of the study's objectives and procedures.

Both printed and online versions of the survey questionnaire were prepared to ensure accessibility and convenience for all respondents. Printed copies were personally delivered by the researcher to the respective schools, while the online version, created using Google Forms, was shared with those who did not receive hard copies. Respondents were given ample time to accomplish the questionnaire, in accordance with approved ethical and operational guidelines. These included proper coordination with school heads, non-disruption of classes, strict confidentiality of responses, and the non-use of government supplies and equipment for research-related activities.

After providing sufficient time for the respondents to complete the questionnaire, the accomplished survey forms were collected. Data from both the printed and online responses were carefully tallied, organized, and analyzed based on the research questions of the study. To validate and enrich the quantitative findings, semi-structured interviews were subsequently conducted with selected respondents.

Statistical Treatment of Data

The data collected in this study were organized and analyzed in accordance with the research questions, research design, and instruments employed. Microsoft Excel (MS Excel) was utilized for the organization and analysis of quantitative data. Descriptive statistical tools, including frequency counts, percentages, and means, were applied to interpret the findings.

Specifically, frequency counts and percentages were used to analyze the research productivity profile of the respondents. The levels of research writing competence and research management competence were examined using mean scores. Additionally, the problems encountered in research writing were analyzed using frequency counts and percentages to determine the most commonly reported challenges.

Ethical Considerations

The researchers strictly adhered to established ethical standards and procedures throughout the conduct of the study. Prior to the administration of the survey questionnaire, informed consent was obtained from all respondents. They were given ample opportunity to read and fully understand the terms outlined in the informed consent form, and they were encouraged to ask questions regarding their participation.

It was clearly communicated that all information collected would be treated with the utmost confidentiality and anonymity. The data gathered were used exclusively for the purposes of this research, and access to the data was restricted to the researchers. The right to privacy and anonymity of the respondents was strictly observed. In addition, participants were informed of their right to refuse participation or to withdraw from the study at any point without any consequences.

Result and Discussion

Research Productivity Profile of the Respondents

The research productivity survey reveals that 26.80% of respondents have not attended any research-related training from 2017 to 2021, indicating a need for more training opportunities. Moreover, 43.79% of respondents have not completed any research studies, 30.71% have only presented their research findings, and 7.85% have only published research articles during that period. These figures imply the need for improvements in research output and dissemination. The study by Mejia and Salcedo (2020) identified several factors that influenced research productivity. Access to professional development, such as participation in workshops and seminars, positively impacted teachers' research skills. The availability of research resources also played a

crucial role; however, a lack of access to updated academic journals and research tools limited teachers' ability to deepen their knowledge.

Furthermore, Mejia and Salcedo (2020) noted that institutional support, particularly from school administration through time allocation and encouragement to conduct research, was found to be critical in developing research productivity. Enhancing research skills, promoting research dissemination, and providing training on publishing research articles can address these challenges and strengthen overall research productivity

Table 1. Research productivity profile of master teachers and school heads (n=306).

Characteristics	f	%
Number of Research-Related Training Attended		
10 and above	18	5.88
7-9	16	5.23
4-6	48	15.69
1-3	142	46.40
0	82	26.80
Number of Research Completed		
10 and above	4	1.31
7-9	0	0.00
4-6	12	3.92
1-3	118	38.56
0	172	56.21
Number of Research Presented		
7 and above	6	1.96
6	2	0.65
5	2	0.65
4	0	0.00
3	10	3.27
2	16	5.23
1	58	18.95
0	212	69.28
Number of Research Published		
2 and above	4	1.31
1	20	6.54
0	282	92.15

Research Writing Competence of Master Teachers and School Heads

This section discusses the level of competence of master teachers and school heads in research writing.

Writing the background of the study and literature review. According to Table 2, elementary master teachers are moderately competent in writing the background and literature review but highly competent in determining research relevance and constructing research questions. JHS master teachers excel in writing the background and literature review but struggle with theoretical and conceptual frameworks. Elementary school heads are highly competent in the background and literature review but need improvement in citing literature sources and establishing research gaps. JHS heads are highly competent in conceptualizing the background and literature review.

According to Anub (2020), similar findings were observed by noting that that educators can establish research relevance, construct research questions, and cite the benefits and target beneficiaries of their study. However, they struggle with establishing research gaps in current conditions, which is an area where most educators feel less competent compared to other professionals. Strengthening the skills of master teachers and school heads in

establishing research gaps is crucial. Research writing is important for teachers, as it contributes to improving instructional delivery.

Table 2. Level of competence of master teacher and school heads in writing the background of the study and literature review.

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
a. determines research relevance and usefulness to one's discipline	3.58	HC	3.63	HC	3.72	HC	4.11	HC
b. writes an appropriate introduction	3.41	HC	3.52	HC	3.60	HC	3.94	HC
c. states research questions	3.50	HC	3.68	HC	3.48	HC	4.00	HC
d. conceptualizes relevant and comprehensive research literature	3.28	MC	3.50	HC	3.44	HC	3.76	HC
e. cites sources of literature review using standard styles	3.15	MC	3.62	HC	3.40	MC	3.78	HC
f. establishes research gap in current situations	3.21	MC	3.41	HC	3.40	MC	3.72	HC
g. follows ethical standards in writing related literature	3.36	MC	3.50	HC	3.44	HC	4.22	HC
h. formulates theoretical/conceptual paradigm	3.20	MC	3.38	MC	3.44	HC	3.72	HC
i. formulates hypothesis	3.23	MC	3.62	HC	3.48	HC	3.94	HC
j. indicates the scope and delimitation of the study	3.34	MC	3.71	HC	3.48	HC	4.00	HC
k. cites benefits and beneficiaries of the study	3.43	HC	3.82	HC	3.60	HC	3.94	HC
Sub-Mean	3.34	MC	3.58	HC	3.50	HC	3.92	HC

Legend:	Range of Mean Score	Descriptive Interpretation (DI)
	4.21 – 5.00	Very Highly Competent (VHC)
	3.41 – 4.20	Highly Competent (HC)
	2.61 – 3.40	Moderately Competent (MC)
	1.81 – 2.60	Slightly Competent (SC)
	1.00 – 1.80	Not Competent (NC)

Writing research methodology. Regarding the writing of the research methodology chapter, elementary master teachers express their limited familiarity with its various components. They consider themselves moderately competent in determining the appropriate research design and face challenges in data collection using suitable instruments, data coding and cleaning, and applying different sampling procedures. Additionally, constructing and testing the validity and reliability of questionnaires, as well as utilizing various statistical tools for data analysis, pose difficulties in completing the research methodology chapter.

On the other hand, JHS master teachers, along with elementary and JHS heads, perceive themselves as highly competent in preparing the different sections of the research methodology chapter. They demonstrate proficiency in writing research design, sampling procedures, locale of the study, research instruments, data gathering procedures, statistical treatment of data, and ethical considerations.

These findings are consistent with those reported by Anub (2020) stating that educators excel in gathering data using appropriate instruments, which received the highest rating in writing the research methodology. However, master teachers and school heads exhibit lower competence in testing the validity and reliability of research questionnaires. This indicates their proficiency in selecting suitable data collection tools but not in evaluating their appropriateness for the study's objectives, an aspect they often rely on research statisticians to handle. Similarly, school heads reported moderate to high competence in developing research instruments and in data collection processes.

However, a significant gap was observed in advanced data analysis skills, particularly in interpreting statistical outputs and qualitative data coding (De Asis, Amoyan, & Tamayo, 2023). In support of this, Gomez and Panaligan (2013) further emphasize the need for teachers and school heads to enhance their skills in writing the research methodology, particularly in conceptualizing research designs, constructing questionnaires, and choosing the appropriate statistical tools.

Table 3. Level of competence of master teachers and school heads in writing the research methodology.

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
a. utilizes appropriate research design	3.25	MC	3.59	HC	3.52	HC	3.72	HC
b. collects data using appropriate instruments	3.14	MC	3.74	HC	3.58	HC	3.78	HC
c. applies data entry (coding and cleaning)	3.14	MC	3.56	HC	3.44	HC	3.72	HC
d. applies sampling procedure	3.14	MC	3.65	HC	3.52	HC	3.83	HC
e. constructs questionnaire	3.28	MC	3.53	HC	3.52	HC	3.78	HC
f. establishes the validity and reliability of the questionnaire	3.25	MC	3.50	HC	3.52	HC	3.67	HC
g. applies statistical tools/treatment to analyze data	3.02	MC	3.56	HC	3.44	HC	3.67	HC
Sub-Mean	3.17	MC	3.59	HC	3.51	HC	3.74	HC

Writing research results and discussions.

Elementary master teachers consider themselves moderately competent in presenting and discussing research results, indicating a limited familiarity with presenting, interpreting, and analyzing research data.

On the other hand, JHS master teachers, along with elementary and JHS heads, express high competence in presenting and discussing research results. However, JHS master teachers acknowledge a need for improvement in correlating research findings with existing literature and previous study results.

Anub (2020) provides evidence that aligns with the results of the present study by highlighting that indeed, master teachers and school heads have high competence in presenting and discussing research findings. However, they face challenges in connecting literature to validate their results. This aligns with the findings of Akram and Irfan (2015), emphasizing that while teachers excel in explaining study findings, they struggle to establish connections between existing literature and their own research outcomes. Enhancing their ability to provide relevant literature support for their studies is necessary.

Table 4. Level of competence of master teachers and school heads in writing research results and discussions.

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
a. presents the data gathered in a clear and unambiguous manner (tables, figures, graphs, etc.)	3.30	MC	3.65	HC	3.48	HC	3.94	HC
b. interprets/ analyzes the results	3.23	MC	3.59	HC	3.48	HC	3.89	HC
c. correlates literature to affirm results	3.16	MC	3.30	MC	3.44	HC	3.72	HC
Sub-Mean	3.23	MC	3.51	HC	3.47	HC	3.85	HC

Writing research findings, conclusions, and recommendations. In the findings, conclusions, and recommendations chapter of a research paper, elementary master teachers consider themselves moderately competent in synthesizing research findings, presenting conclusions, and providing recommendations. On the other hand, JHS master teachers, along with elementary and JHS heads, claim high competence in presenting research findings, conclusions, and recommendations. However, elementary school heads rate themselves as moderately competent in writing research conclusions and recommendations.

The study of Anub (2020) reinforces these observations by indicating that some teachers and school heads still lack proficiency in providing recommendations and presenting conclusions that align with the study's objectives, outcomes, and theoretical framework. While teachers find it easier to connect the findings to conclusions and recommendations, they struggle with drawing appropriate conclusions that encompass the study's objectives, results, and theory. This requires a thorough examination of the study's findings.

Additionally, master teachers and school heads consider the conceptualization of conclusions and recommendations as the most crucial aspect of research writing. They also emphasize the importance of providing an accurate overview of the research and including relevant information to support the main thesis. Although they find it easier to draft conclusions and recommendations since they don't involve analysis or computations, they face difficulties in creating an appropriate study overview and presenting all necessary information to support the main thesis.

All things considered, elementary master teachers are moderately competent in synthesizing research findings, conclusions, and recommendations, while JHS master teachers and school heads exhibit higher competence in these areas. However, elementary school heads rate themselves as moderately competent in writing research conclusions and recommendations.

Table 5. Level of competence of master teachers and school heads in writing research findings, conclusions, and recommendations.

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
a. synthesizes results of the findings	3.23	MC	3.53	HC	3.44	HC	3.78	HC
b. presents conclusions that reflect the objectives, results and validate the theory used	3.30	MC	3.56	HC	3.40	MC	3.78	HC
c. formulates recommendations to address the research problem and concerns found in the study	3.30	MC	3.53	HC	3.40	MC	3.83	HC
Sub-Mean	3.28	MC	3.54	HC	3.41	HC	3.80	HC

Writing research abstracts. Table 6 reveals that elementary master teachers and school heads possess moderate competence in writing research abstracts. They still need to enhance their skills in presenting the synopsis and focus of their research, summarizing research methods, outlining results, and summarizing conclusions and recommendations. They also display moderate knowledge of the correct format for writing research abstracts. Conversely, JHS master teachers and school heads consider themselves highly competent in writing research abstracts, indicating their ability to independently organize and format abstracts for their research.

Writing research bibliography and appendices. Table 7 shows that elementary master teachers have moderate competence in presenting the correct format of bibliography and appendices for their research. They may need to improve their skills in accessing updated resources and providing supplementary

information. Conversely, JHS master teachers, along with elementary and JHS heads, exhibit high competence in formatting the bibliography and appendices of their research reports.

This aligns with the findings of Anub (2020), which indicate that most master teachers and school heads are capable of writing and formatting the bibliography and appendices. They demonstrate knowledge in using the APA citation style and including various sources of information from books and journals, both in print and non-print formats.

Table 7. Level of competence of master teachers and school heads in writing research bibliography and appendices.

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
a. presents an accurate synopsis of the paper	3.16	MC	3.47	HC	3.32	MC	3.72	HC
b. clearly states the research focus	3.25	MC	3.68	HC	3.40	MC	3.89	HC
c. summarizes the research methods used	3.20	MC	3.59	HC	3.28	MC	3.83	HC
d. outlines the results and discussion of the study	3.18	MC	3.56	HC	3.40	MC	3.78	HC
e. summarizes the conclusion and recommendation of the study	3.32	MC	3.62	HC	3.40	MC	3.89	HC
f. uses correctly the abstract format	3.14	MC	3.45	HC	3.24	MC	3.78	HC
Sub-Mean	3.21	MC	3.56	HC	3.34	MC	3.82	HC

Table 7. Level of competence of master teachers and school heads in writing research bibliography and appendices.

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
Bibliography								
a. presents/formats correctly the bibliography	3.14	MC	3.50	HC	3.52	HC	3.94	HC
b. accesses the available and updated materials	3.12	MC	3.56	HC	3.48	HC	3.83	HC
Sub-Mean	3.13	MC	3.53	HC	3.50	HC	3.89	HC
Appendices								
a. presents/ formats correctly the appendices	3.14	MC	3.71	HC	3.44	HC	3.89	HC
b. provides supplementary information to the main thesis	3.19	MC	3.62	HC	3.52	HC	3.61	HC
Sub-Mean	3.17	MC	3.67	HC	3.48	HC	3.75	HC

Conducting quantitative research. Table 8 summarizes the level of competence of master teachers and school heads in conducting quantitative research. Elementary master teachers rate themselves as moderately competent in various indicators related to quantitative research. They express a need for improvement in areas such as preparing survey questionnaires, controlling and testing variables, identifying quantifiable patterns and behaviors, conducting structured interviews, and organizing, presenting, analyzing, and interpreting quantitative data.

On the other hand, JHS master teachers, along with elementary and JHS heads, consider themselves highly competent in conducting quantitative research. However, a closer

examination of the table reveals that both JHS master teachers and elementary school heads still have moderate competence in determining quantifiable patterns and behaviors. Additionally, elementary school heads feel the need for further training in conducting structured interviews to obtain numerical data.

Given these findings, it is evident that many master teachers and school heads face similar challenges. Therefore, it is recommended to provide training or development programs focused on conducting quantitative research, particularly in areas such as selecting appropriate statistical tools.

Table 8. Level of competence of master teachers and school heads in conducting quantitative research

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
a. prepares survey questionnaires that are used in gathering numerical data	3.27	MC	3.50	HC	3.48	HC	3.71	HC
b. controls and tests variables to demonstrate cause-and-effect relationships	3.09	MC	3.41	HC	3.44	HC	3.53	HC
c. looks at quantifiable patterns and behaviors	3.09	MC	3.38	MC	3.36	MC	3.71	HC
d. conducts structured interviews with a fixed set of questions to acquire numerical data	3.14	MC	3.47	HC	3.36	MC	3.82	HC
e. organizes, presents, analyzes, and interprets quantitative data	3.20	MC	3.48	HC	3.56	HC	3.81	HC
Sub-Mean	3.16	MC	3.45	HC	3.44	HC	3.72	HC

Conducting qualitative research. Table 9 reveals that elementary master teachers have a moderate level of competence in conducting qualitative research. They acknowledge their need for improvement in conducting in-depth investigations, guiding conversations, interacting with and observing people in real-life settings, and asking meaningful questions to gain participants' perspectives. They also find it challenging to effectively organize, present, analyze, and interpret qualitative data.

In contrast, JHS master teachers, along with elementary and JHS heads, consider themselves highly competent in qualitative research methods. They demonstrate proficiency in conducting in-depth investigations, interacting with individuals in real-life contexts, interviewing participants, and analyzing and interpreting qualitative data. However, elementary school heads express a need for further training in guiding research participants in conversations around specific topics.

Based on these findings, it is evident that master teachers and school heads would benefit from exposure and experience in qualitative research. Implementing training or development programs focused on qualitative research can enhance their knowledge and competence in this area.

Table 9. Level of competence of master teachers and school heads in conducting qualitative research.

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
a. conducts in-depth investigations into an individual, group, event, or community, typically gathering data through observation and interviews	3.16	MC	3.53	HC	3.38	MC	3.72	HC
b. guides conversation around a specific topic among a group of participants (focus group)	3.20	MC	3.62	HC	3.36	MC	3.72	HC
c. interacts with and observes a specific group of people in their real-life environment	3.18	MC	3.56	HC	3.48	HC	3.59	HC
d. asks participants questions to learn about their perspectives on a particular subject	3.32	MC	3.68	HC	3.44	HC	3.82	HC
e. organizes, presents, analyzes, and interprets qualitative data	3.18	MC	3.56	HC	3.44	HC	3.71	HC
Sub-Mean	3.21	MC	3.59	HC	3.42	HC	3.71	HC

Level of Competence in Research-related ICT Skills. Elementary master teachers have a moderate level of competence in utilizing their ICT skills for research purposes, according to Table 10. Conversely, JHS master teachers, along with elementary and JHS heads, assert their high competence in employing computer office applications, conducting internet research, and utilizing online communication for research.

These findings align with previous studies, such as Osamwonyi (2016) and Okojie and Olinzock (2013), which emphasize the proficiency of teachers and school heads in utilizing office software and ICT tools in teaching and research. However, Anub (2020) warns that relying too heavily on ICT-aided activities in research may result in methodological faults and undermine the validity of data and conclusions. It is important for educators to actively engage in their research rather than relying solely on ICT resources.

Moreover, Selvi (2010) highlights the critical role of ICT proficiency in improving communication in teaching and research. Enhancing ICT skills among educators is essential for effective collaboration and information sharing.

Table 10. Level of competence of master teachers and school heads in research-related ICT skills.

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
a. uses knowledge and skills in office applications	3.43	HC	3.76	HC	3.60	HC	4.11	HC
b. performs internet research using search engines	3.11	MC	3.47	HC	3.46	HC	3.56	HC
c. conducts online communication	3.44	HC	3.67	HC	3.54	HC	3.94	HC
Sub-Mean	3.33	MC	3.63	HC	3.53	HC	3.87	HC

Level of Competence in Research Ethical Principles and Standards. Both elementary and JHS master teachers, as well as school heads, exhibit a high level of competence in observing research ethics, as shown in Table 11. They demonstrate a strong understanding of respecting participants' autonomy, ensuring participant well-being, and protecting the interests of the community. They also follow procedures to minimize risks and maximize benefits for research participants.

These findings align with the study by Anub (2020), which supports the high proficiency of educators in adhering to research ethical principles and standards. Educators prioritize the rights and dignity of participants and carefully select participants who can potentially benefit from the research. The ethical principles of confidentiality, anonymity, non-maleficence, and beneficence are also upheld by educators, as affirmed by Osamwonyi (2016).

It is evident that master teachers and school heads are committed to following the Code of Ethics in Research, which emphasizes the protection of participants' privacy and confidentiality. They understand the importance of obtaining informed consent and upholding the autonomy of participants, especially minors. The rights and welfare of participants are safeguarded throughout the research process.

Table 11. Level of competence of master teachers and school heads in research ethical principles and standards.

Statements	Elementary Master Teachers (n=142)		JHS Master Teachers (n=50)		Elementary School Heads (n=89)		JHS Heads (n=25)	
	Mean	DI	Mean	DI	Mean	DI	Mean	DI
a. respects the autonomy, decision-making, and dignity of respondents	3.61	HC	3.88	HC	3.76	HC	4.11	HC
b. minimizes the risks (physically, psychologically, and socially) and maximizes the benefits to research respondents	3.51	HC	3.82	HC	3.72	HC	4.17	HC
c. selects respondents from groups of people whom the research may benefit	3.55	HC	3.82	HC	3.64	HC	4.11	HC
d. protects and respect the values and interest of the community as a whole and protect the community from harm	3.66	HC	3.88	HC	3.72	HC	4.11	HC
Sub-Mean	3.58	HC	3.85	HC	3.71	HC	4.13	HC

Overall Level of Competence of Master Teachers and School Heads in Research Writing. Table 12 presents the composite means of research writing components based on the survey responses of master teachers and school heads from SDOIN. The overall evaluation indicates that both master teachers and school heads perceive themselves as highly competent in research writing. However, a closer examination of the table reveals that master teachers consider themselves moderately competent in writing the methodology, results and discussion, abstract, and bibliography sections of a research paper. They also indicate moderate competence in utilizing quantitative and qualitative research approaches. Conversely, master teachers express high competence in applying research-related ICT skills and adhering to research ethical principles and standards.

Meanwhile, school heads evaluate themselves as highly competent across different aspects of research writing, including dealing with quantitative and qualitative research approaches. They also believe they can effectively use ICT for research purposes, and they demonstrate a strong commitment to upholding research ethical principles and standards.

These findings align with the assertions of Gomez and Panaligan (2013), who suggest that teachers and school heads possess the necessary research skills, particularly in technical el-

ements, major parts of a research paper, preliminaries, and research-related ICT skills. However, they also agree with this study's findings that teachers and school heads may still have room for improvement in writing research abstracts, bibliographies, and appendices.

According to Bwendo (2015), teachers are more likely to develop a lasting interest in an activity when they believe in their capabilities and expect valuable outcomes. It implies that teachers and school heads are motivated to enhance their research competence to effectively communicate and impart skills to other teachers. This supports Harter's competence motivation theory, which emphasizes that competence contributes to self-improvement and individuals engage in activities to gain skills.

Table 12. Overall level of competence of master teachers and school heads in research writing.

Components of Research Writing	Master Teachers		School Heads	
	Composite Mean	DI	Composite Mean	DI
A. Parts of a Research Paper				
1.Background of the Study and Literature	3.46	HC	3.71	HC
2. Methodology	3.38	MC	3.63	HC
3. Results and Discussion	3.37	MC	3.66	HC
4. Findings, Conclusion and Recommendations	3.41	HC	3.61	HC
5. Abstract	3.39	MC	3.58	HC
6. Bibliography	3.33	MC	3.70	HC
7. Appendices	3.42	HC	3.62	HC
B. Research Approaches				
1. Quantitative Research Approach	3.31	MC	3.58	HC
2. Qualitative Research Approach	3.40	MC	3.57	HC
C. Research-Related ICT Skills	3.48	HC	3.70	HC
D. Research Ethical Principles and Standards	3.72	HC	3.92	HC
Overall Mean	3.42	HC	3.66	HC

Problems Encountered in Research Writing

As indicated in Table 13, many master teachers and school heads face several challenges in research writing. The most prominent issue is the lack of time, with a significant percentage of respondents struggling to find sufficient time for research due to heavy workloads. Despite their motivation, many master teachers struggle to balance research tasks alongside their regular teaching and administrative duties. The limited time allocated for research activities significantly reduces opportunities for meaningful engagement with research projects. In addition, they face difficulties in research planning and implementation, lack skills in conducting research, and encounter financial constraints, including insufficient funding and limited access to research materials. A gap in methodological knowledge, particularly in advanced research techniques, further affects the overall quality and rigor of their research outputs (Wong, 2019).

Furthermore, several studies like that of Morales (2016), Palaspas (2021), and Enerio (2020) support these findings, highlighting similar challenges faced by teachers, including heavy workloads, lack of financial support, limited research expertise, and time constraints. Improving support and resources in these areas can enhance research capabilities among master teachers and school heads.

Table 13. Problems encountered by master teachers and school heads in research writing (n=306).

Statements	f	%	Rank
a. The presence of a large amount of schoolwork and other work-related activities.	282	92.16	1

Statements	f	%	Rank
b. Inadequate time for research planning and execution.	256	83.66	2
c. Insufficiency of budget for research purposes.	238	77.78	3
d. Absence of readiness in research planning and implementation.	190	62.09	4
e. The absence of research journals, books, and references.	170	55.56	5
f. A lack of understanding of the scientific method	162	52.94	6
g. Inadequate understanding of research procedures and processes.	158	51.63	7
Statements	**f**	**%**	**Rank**
h. Poor access to the internet and other online resources	144	47.06	8
i. Poor skills in organizing research processes and reports.	134	43.79	9
j. Inadequate ability to collaborate with school personnel on research projects.	118	38.56	10
k. Lack of understanding of critical thinking and higher order thinking.	88	28.76	11
l. Poor skills in mentoring.	74	24.18	12
m. Computers, printers, and other equipment are unavailable.	60	19.61	13

Implications of Results to Research Management

Based on the respondents' research productivity profiles and their levels of competence in research writing, several implications arise regarding the capacity of master teachers and school heads to effectively manage research activities.

Training needs. The fact that a significant percentage of respondents did not attend any research-related training in the last five years suggests a lack of exposure to research methodologies, data analysis techniques, and other essential research skills. Providing adequate training can enhance their research competencies and enable them to effectively manage research activities. According to Lagrio, Fabonan, and San Jose (2022), implementing training sessions focused on research methodologies, data analysis, and academic writing is essential to build confidence and competence among educators.

Research Output. The low percentage of respondents who have completed research studies, presented their findings, and published research articles indicates a need to improve research output. This can be addressed by providing guidance and support to master teachers and school heads in conducting research, writing research papers, and navigating the publication process.

Research Writing Skills. Although master teachers and school heads perceive themselves as highly competent in research writing overall, effective management of research activities necessitates strong writing skills to clearly communicate research objectives, methods, findings, and conclusions. Providing targeted training and resources to enhance research writing skills can contribute to better research management.

Utilizing Quantitative and Qualitative Research. The moderate level of competence reported by master teachers and school heads in utilizing quantitative and qualitative research methods indicates the need for further development in these areas. Strengthening competence in both quantitative and qualitative research approaches can enhance the ability to manage research activities effectively.

Research Ethical Principles. The high level of competence observed among master teachers and school heads in observing research ethical principles and standards is a positive finding. Continued emphasis on research ethics can ensure that research activities are conducted ethically and contribute to the overall quality of research management.

Conclusion

The respondents' attendance in research-related trainings, as well as their completed research projects, presentations, and publications, were found to be relatively low. This highlights the need to provide more training opportunities to enhance their research skills and competencies.

The assessment of research writing competence highlights areas that require improvement, such as establishing research gaps, questionnaire validity and reliability testing, connecting findings with existing literature, and incorporating relevant literature for support. Enhancing the competence of the respondents in areas such as in writing research methodology, doing data analysis, and connecting research findings with literature can contribute to better research outputs and dissemination of findings.

Recommendations

To improve research productivity and writing competence among master teachers and school heads, the concerned offices may provide regular and comprehensive training programs to enhance their research skills, covering research design, data analysis, and publication strategies. They may also organize conferences, seminars, and workshops for educators to present their research outputs and provide guidance and mentorship to improve presentation skills and encourage participation in research-oriented events.

The master teachers and school heads may also be encouraged to collaborate on research activities, both within schools and among schools. Promote a culture of sharing knowledge and resources to facilitate research productivity and learning from each other's expertise.

In considering these recommendations, the research productivity and research writing competence of educators may be enhanced, for the generation of valuable knowledge in the advancement of the quality of basic education.

Limitations

It is important to acknowledge the limitations of the study. The sample size restricts the generalizability of the findings to a larger population of master teacher and school heads. Relying solely on self-assessments and single perspectives may introduce biases and limit the objectivity of the results. Additionally, the study's focus on specific research productivity characteristics may limit the applicability of the findings to a more diverse group of master teacher and school heads. Furthermore, the study did not consider contextual factors that could influence research writing competence. Finally, the absence of a long-term assessment of capability-building programs prevents a comprehensive understanding of their sustained impact. Future research should address these limitations to obtain a more comprehensive understanding of the research writing competence of master teacher and school heads.

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