

Master Teachers' Competence, Technical Assistance and Challenges in Educational Research: Basis for Training Enhancement

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Abstract—Master Teachers as pivotal instructional leaders are expected to model best practices not only in teaching but also in advancing a research-oriented culture that supports evidence-based instruction and continuous school improvement. This study aimed to assess the research competence of Master Teachers and examine the extent of technical assistance they provide to educators in conducting research within the context of the Philippine basic education system. The study employed descriptive-quantitative research using a researcher's made survey questionnaire to determine the research competence of 16 master teacher-respondents and examine the extent of technical assistance in terms of Idea Sharing, Professional Development and Enhancement of Learning Environment. The challenges encountered by the respondents in conducting research were also explored. These data were analyzed and collated using suitable statistical tools and were interpreted and discussed consequently. The findings of the study showed that the master teachers are competent in various domains of educational research, particularly in data collection and research question framing. The study revealed that Master Teachers demonstrated a moderate level of support in terms of technical assistance, especially in enhancing the learning environment, sharing ideas, and promoting professional development. The study also showed that Master Teachers face significant challenges in conducting educational research, largely due to excessive workload, limited training opportunities, and lack of time. Furthermore, the study revealed that there is a significant relationship between master teachers' competence and the technical assistance provided. Meanwhile, their profile such as age, educational attainment and the number of research trainings attended showed no significant influence in their extent of technical assistance on research.

Index Terms—Master Teachers, Research Competence, Technical Assistance.

1. Introduction

The core mission of every educational institution is to deliver quality education that prepares learners to be globally competitive. Achieving this goal depends largely on the presence of proficient teachers who demonstrate mastery of subject matter, pedagogical expertise, effective classroom management, and sound assessment practices. Central to this effort are instructional leaders particularly Master Teachers (MTs) who not only embody instructional excellence but also serve as catalysts for professional development, pedagogical

innovation, and collaborative learning among educators.

Master Teachers are widely recognized as content and pedagogical experts. As highlighted by Tupas and Palmares (2019), their competence is pivotal in ensuring the effectiveness of teaching and learning processes. Beyond instructional delivery, their role encompasses instructional leadership, mentoring, technical assistance (TA) provision, and contribution to curriculum refinement (Parveen et al., 2021; Malitic, 2020; Hernández-Rebolledo, 2021). These responsibilities position them as change agents within schools, capable of modeling best practices and driving systemic improvements.

A critical dimension of instructional leadership is engagement in and support for educational research. As emphasized by Comon and Corpuz (2024), research competence among teachers serves as a foundation for informed decision-making and continuous pedagogical improvement. The Department of Education, through DepEd Order No. 13, s. 2015, institutionalized this expectation by mandating research engagement for both teachers and Master Teachers. However, studies reveal emerging concerns. While MTs are expected to provide guidance in senior high school research subjects such as Practical Research 1 and 2, several of them have not met key instructional expectations (Malitic, 2020). Almazan and Viñas (2023) also noted low confidence levels among teachers in teaching basic research concepts, signaling a need for targeted professional development.

Furthermore, the capacity of MTs to provide technical assistance in research-related matters is fundamental. Research by Sangalang (2018) affirms MTs' high proficiency in both general and specialized TA competencies. Interestingly, this effectiveness appears independent of personal demographics, suggesting that professional training is key to TA success.

While policies and frameworks exist to support research engagement, there remains a notable gap in actual practice. This disconnect between expectation and execution raises urgent questions about the preparedness of Master Teachers to function as research mentors and instructional leaders in the context of a research-oriented educational landscape.

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Thus, this study seeks to assess the research competence of Master Teachers and evaluate the extent of the technical assistance they provide to fellow educators in conducting research. It also aims to identify challenges that limit their research engagement. Findings from this investigation will serve as the basis for the development of a Training Enhancement Program designed to build capacity and close critical gaps in instructional and research leadership.

2. Methodology

A. Research Design

This study employed descriptive correlational design. According to Katzukov (2020), a descriptive correlational study describes the correlations between variables without attempting to establish a causal relationship. Additionally, correlational research facilitates comparisons between two or more things or variables.

B. Research Locale

This study was conducted in the Curuan District, Zamboanga City, Philippines, specifically focusing on master teachers from public elementary and secondary schools in the area. Known for its diverse academic landscape, the district encompasses schools across all levels including Senior High School, each with unique profiles in terms of resources, faculty composition, and student needs.

C. Respondents of the Study

Sixteen master teachers from Curuan District, Zamboanga City for the School Year 2024-2025 served as respondents of this study.

D. Sampling Technique

The study utilized purposive sampling to identify respondents, guided by specific criteria. The respondents, identified as master teachers, include individuals serving as research coordinators or those recognized for their expertise in providing technical assistance related to educational research.

Purposive sampling is also known as judgmental, selective, or subjective sampling where a sample is a non-probability sample that is selected based on characteristics of a population and the objective of the study (Crossman, 2017).

E. Research Instrument

This study employed a researcher-made questionnaire, adapted from various established studies, as the primary tool for collecting the required data. The instrument is divided into three (3) sections: Part I, adapted from Cagaanan, J.C. et al. (2018), this section assesses the competence of master teachers across four areas: Framing of Research Questions, Capacity for Developing Research Instruments, Critical Review of Literature and Comprehensive Theoretical Knowledge, Data Collection Competencies, and Data Analysis Competencies. Part II, inspired by Guanzon, L.E. et al. (2023), this section evaluates the extent of master teachers' technical assistance in conducting educational research, focusing on idea sharing, professional development, and fostering an enhanced learning

environment. Part III, based on the work of Magnaye, L. Jr. A. (2022), this section identifies the challenges faced by master teachers in conducting educational research. The item statement measured each indicator with the use of a 4-point Likert Scale.

F. Validity and Reliability Test

This study utilized an instrument subjected to face and content validity and reliability test. The researcher utilized an evaluation instrument to assess the validity of the developed semi-structured questionnaires, which were validated by three research experts: two full-pledge Doctorate Degree and one currently pursuing a doctorate degree. The instrument was pilot tested to 15 master teachers from different district. The data gathered from the pilot testing was subjected to a statistic Cronbach's Alpha to determine its reliability. The computed coefficient which was 0.87 confirmed that the survey instrument was good and valid.

G. Data Gathering Procedure

To ensure ethical compliance and institutional alignment, the researcher first obtained approval from the Office of the Schools Division Superintendent and the Public Schools District Supervisor to conduct the study. Upon securing official endorsement, formal letters were distributed to the principals of the schools within Curuan District to inform them of the study's objectives and request their cooperation. Following the granting of permission at the school level, the researcher administered the survey instruments to the identified Master Teachers, ensuring that the data collection process was conducted respectfully, transparently, and in accordance with established protocols.

H. Statistical Analysis

The statistical tools used in the study were Weighted Mean, Spearman Rank-Order Correlation Coefficient (rs) and One-Way ANOVA.

Weighted Mean. It was employed to find out the level of master teachers research competence, the extent of master teachers on teachers' technical assistance and challenges in educational research.

Spearman Rank-Order Correlation Coefficient (rs). This was used in testing the significant relationship between the level of master teachers research competence and the extent of master teachers' technical assistance towards research.

One-Way ANOVA. This was used to test the significant difference in the extent of master teachers' technical assistance towards educational research when grouped according to age, educational attainment and number of trainings attended on research.

3. Results and Discussion

A. Problem 1: What is the Level of Master Teacher's Competence in Educational Research in Terms of Framing of Research Questions and Capacity of Developing Instrument, Critical Review of Literature and Comprehensive Theoretical Knowledge, Data Collection Related Competencies, Data Analysis Related Competencies?

Table 1 shows the level of Master Teachers' competence in educational research across four key domains: (1) framing of research questions and instrument development, (2) critical review of literature and theoretical knowledge, (3) data collection competencies, and (4) data analysis competencies.

Data Collection Related Competencies received the highest mean ($M = 3.08$), suggesting that Master Teachers feel most confident in carrying out research-related data gathering activities. This was followed by Framing of Research Questions and Capacity of Developing Instruments ($M = 3.00$), showing satisfactory skill in initiating research inquiries and tool development. Critical Review of Literature and Comprehensive Theoretical Knowledge had a slightly lower mean ($M = 2.82$), suggesting moderate competence in engaging with scholarly literature and theories. Data Analysis Related Competencies received the lowest mean ($M = 2.74$), which may reflect a relative challenge in performing statistical or qualitative analysis. The overall mean score is 2.91, which still falls under the "Competent" category, indicating that Master Teachers generally possess an adequate level of competence in conducting educational research. The results indicate that Master Teachers demonstrate a competent level of research capability across all domains assessed. Their strongest area appears to be in data collection, possibly because this is the most hands-on and practice-based aspect of research, often integrated into action research or school-based projects. Conversely, the lowest-rated area which is data analysis competencies may reflect a need for further capacity-building, particularly in statistical tools, data interpretation, or the use of software such as SPSS or Excel.

This finding aligns with Carreon and Manlangit (2020), who

found that many Master Teachers excel in classroom-based inquiry and tool development but require additional support in analyzing and interpreting data. Similarly, Guanzon and Miranda (2023) emphasized that technical assistance skills are often more developed than research interpretation skills, suggesting a gap between data generation and data utilization.

B. Problem 2. What is the Extent of Master Teacher's Technical Assistance Skills in Educational Research in Terms of Ideas Sharing, Professional Development and Enhancement of Learning Environment

Table 2 presents the extent of Master Teachers' technical assistance skills in educational research across three domains: idea sharing, professional development, and enhancement of the learning environment.

Enhancement of the Learning Environment received the highest mean ($M = 3.24$), suggesting that Master Teachers contribute moderately well to improving school settings through research-based strategies and support. Both Idea Sharing and Professional Development received equal mean scores ($M = 3.15$), indicating that Master Teachers moderately engage in collaborative practices and capacity-building initiatives. The overall mean score of 3.18 confirms a moderate extent of technical assistance in educational research, implying that while Master Teachers are involved in supporting others, there remains room for growth particularly in maximizing their role as resource persons and research mentors.

These findings are consistent with Del Rosario and Alcaraz (2023), who reported that Master Teachers in Taguig and Pateros demonstrated strong instructional leadership but inconsistently applied their expertise in collaborative and mentoring roles.

C. Problem 3. What are the Challenges Encountered by Master Teachers in Conducting Educational Research?

Table 3 reveals that master teachers encounter a considerable degree of difficulty in conducting educational research, as indicated by an overall mean score of 3.10, interpreted as Challenge. The challenges excessive teaching workload with a

Table 1

Level of master teacher's competence in educational research in terms of framing of research questions and capacity of developing instrument, critical review of literature and comprehensive theoretical knowledge, data collection related competencies, data analysis related competencies

Level of Master Teachers Competence in Educational Research	Mean	Verbal Description
Framing of Research Questions and Capacity of Developing Instrument	3.00	Competent
Critical Review of Literature and Comprehensive Theoretical Knowledge	2.82	Competent
Data Collection Related Competencies	3.08	Competent
Data Analysis Related Competencies	2.74	Competent
Overall Mean	2.91	Competent

Legend: Verbal Interpretation

1.00-1.71 – Not at all Competent 2.50 - 3.24 – Competent

1.75 - 2.49 – Less Competent 3.25 - 4.0 – Highly Competent

Table 2

The extent of master teacher's technical assistance skills in educational research in terms of ideas sharing, professional development and enhancement of learning environment

Extent of Master Teachers' Technical Assistance Skills in Educational Research	Mean	Verbal Description
Ideas sharing	3.15	Moderate
Professional Development	3.15	Moderate
Enhancement of Learning Environment	3.24	Moderate
Overall Mean	3.18	Moderate

Legend: Verbal Interpretation

1.00-1.71 – Very Low 2.50 - 3.24 – Moderate

1.75 - 2.49 – Low 3.25 - 4.0 – High

Table 3
Challenges encountered by master teachers in conducting educational research

Statement	Mean	Verbal Description
Limited training and seminars on research activities	3.37	Highly Challenge
Lack of sufficient time for conducting research	3.37	Highly Challenge
Low confidence in research skills	3.13	Challenge
Difficulty in interpreting and presenting findings	2.81	Challenge
Difficulty identifying a researchable problem and formulating a title	2.88	Challenge
Excessive teaching workload	3.38	Highly Challenge
Limited institutional research funding	3.13	Challenge
Difficulty selecting or applying statistical tools	2.94	Challenge
Insufficient library and reference materials	3.13	Challenge
Anxiety about writing and publishing research	2.88	Challenge
Overall Mean	3.10	Challenge

Legend: Verbal Interpretation
 1.00-1.71 – Not At All Challenge 2.50 - 3.24 – Challenge
 1.75 - 2.49 – Less Challenge 3.25 - 4.0 – Highly Challenge

Table 4
Correlation: Master teachers' competence and their technical assistance

x	y	r-value	p-value	Interpretation
Master Teachers Competence	Technical Assistance	0.730	0.001	Significant

mean of 3.38, limited training and seminars on research activities with a mean of 3.37 and lack of sufficient time for conducting research with a mean of 3.37, were all interpreted as Highly Challenge. These results suggest that both structural and institutional constraints particularly workload demands, and insufficient research support serve as major barriers to research engagement.

Meanwhile, the challenges difficulty identifying a researchable problem with a mean of 2.88, anxiety about writing and publishing with a mean of 2.88, and difficulty in interpreting and presenting findings with a mean of 2.81 were all described as Challenge. These findings point to gaps in both technical knowledge and psychological readiness highlighting a need for capacity-building that addresses not only technical competencies but also research confidence and resilience.

These findings are consistent with Bullo et al. (2021), who found that teacher-researchers often perceive educational research as an additional burden due to excessive teaching workload, lack of time, and limited access to training. Their study also highlighted challenges in data interpretation, writing anxiety, and low research confidence. The results echo those of Borreo (2023), who examined the competence and challenges of teacher-researchers in Infanta District. Borreo's study identified similar obstacles particularly the lack of research training, excessive workload, and difficulty differentiating action research from traditional research approaches as key hindrances to teachers' research participation.

In alignment with these findings, Macalam et al. (2024) explored the challenges encountered by head teachers in providing technical assistance for research. Their study highlighted the lack of resources and funding to motivate teachers to do research, lack of school support and funds that triggered teachers to be less interested in writing research, the burden of teaching loads and administrative paperwork, limited research knowledge and skills due to inadequate training, time constraints caused by numerous school activities, and the absence of collaborative efforts among teachers to pursue meaningful research initiatives.

D. Problem 4. Is there a Significant Relationship Between Master Teachers' Competence and Technical Assistance in Educational Research?

Table 4 presents the correlation between Master Teachers' competence and their provision of technical assistance in educational research. The computed correlation coefficient of 0.730 indicates a strong positive relationship between the two variables. The p-value of 0.001 is below the significance level of $\alpha = 0.05$, confirming that the correlation is statistically significant. Consequently, the null hypothesis stating that no significant relationship exists between Master Teachers' competence and their technical assistance is rejected. This implies that higher levels of competence among Master Teachers are associated with greater technical assistance provided.

This finding is corroborated by Guanzon and Miranda (2023), who emphasized that Master Teachers with higher competence and professionalism demonstrated stronger mentoring skills, effective group facilitation, and instructional guidance. Similarly, Conales, Dacanay, and Perez (2023) found that pedagogically competent Master Teachers were frequently sought out for mentoring, curriculum planning, and assessment support reinforcing their role as vital sources of technical assistance. These studies affirm that competence not only enhances individual research practice but also facilitates knowledge-sharing and peer empowerment. As Master Teachers grow in capability, their contributions to institutional research culture and instructional improvement become increasingly impactful.

E. Problem 5. Is there as Significant Difference in the Extent of Master Teacher's Technical Assistance when Variables are Grouped According to Age, Educational Attainment and Number of Trainings Attended on Research

Table 5 presents the extent of Master Teachers' technical assistance on research when grouped according to age, educational attainment, and number of research trainings attended. The computed F-values of 0.445, 0.066, and 0.216, with corresponding p-values of 0.726, 0.936, and 0.649

Table 5

The extent of master teacher's technical assistance when variables are grouped according to age, educational attainment and number of trainings attended on research

Master Teachers' Technical Assistance on Research	Sum of Squares	Mean Square	F-Value	P-Value	Interpretation
Age	.359 3.232 3.591	.120 .269	.445	.726	Not Significant
Educational Attainment	.036 3.555 3.591	.018 .273	.066	.936	Not Significant
Number of Trainings attended on Research	.055 3.537 3.591	.055 .253	.216	.649	Not Significant

Table 6

Duration	Topic	Session Objectives	Methodology	Outputs
Day 1	Advanced Research Skills Development	<ul style="list-style-type: none"> Improve skills in literature review, theoretical integration, and data analysis. Familiarize with research tools for quantitative and qualitative studies. 	Activities: Conduct an interactive lecture on writing literature reviews and synthesizing themes, a hands-on workshop on data analysis using statistical software such as SPSS and Excel, and a practice session focused on coding and interpreting qualitative data.	Practical data analysis output.
Day 2	Research Writing and Publication	<ul style="list-style-type: none"> Build confidence in research topic identification and framing. Address writing anxiety through guided practice. 	Activities: Conduct a Lecture on selecting feasible research topics, a Workshop on writing problem statements, objectives, and research questions, a Peer-editing session to critique sample drafts, and a Seminar on strategies for journal publication and conference presentation.	Draft of research proposal sections.
Day 3	Time and Workload Management for Researchers	<ul style="list-style-type: none"> Equip Master Teachers with strategies to balance teaching, mentoring, and research. Reduce research-related stress and time constraints. 	Activities: Conduct a Seminar on workload prioritization and time-blocking techniques, Group Sharing on identifying common barriers in research engagement and create and Action Plan on Designing personal research schedules.	Individual action plan for research engagement.
Day 4	Strengthening Technical Assistance and Mentoring	<ul style="list-style-type: none"> Enhance Master Teachers' ability to coach and mentor colleagues in research. Promote professional collaboration through idea sharing and technical assistance. 	Activities: Conduct a Workshop on coaching and mentoring strategies in research, a Simulation/Role play of research clinics and mentoring sessions, and a Case study on successful practices of research-based technical assistance	Mentoring demonstration activity.
Day 5	Sustainability and Research Culture Building	<ul style="list-style-type: none"> Build institutional support and peer networks for continuous research improvement. Develop strategies for sustaining research culture in schools. 	Activities: Conduct a Seminar on establishing school-based research hubs, a Workshop on designing research support systems at the division or school level, and create an Action Planning session focused on developing sustainability plans such as research clinics and peer mentoring.	Group output: School/division research sustainability plan.

respectively, are greater than the significance level of $\alpha = 0.05$. These findings indicate that the differences in technical assistance across the grouped variables are not statistically significant. Therefore, the null hypothesis which states that there is no significant difference in the extent of Master Teachers' technical assistance when grouped by age, educational attainment, and number of research trainings attended is accepted.

These results suggest that Master Teachers, regardless of their demographic characteristics or training background, tend to provide a similar level of support in assisting colleagues with research-related tasks. This outcome aligns with the findings of a study conducted in Taguig and Pateros by Del Rosario and Alcaraz (2023), which reported that despite high ratings in instructional supervision and technical assistance, there was no significant correlation between teachers' demographic factors such as educational attainment and experience and the level of

technical assistance they provided.

F. Problem 6. On the Basis of the Findings of the Study, what Training Program can Be Proposed?

Proposed Training Program: Research Competence and Technical Assistance Enhancement Program

Program Goal: To strengthen the research competence and technical assistance capabilities of Master Teachers by addressing their identified needs in research skills, workload management, and mentoring functions, enabling them to become effective research leaders and instructional innovators.

Target Participants: Master Teachers

Duration: 5 days (modular, can be delivered consecutively or spread across weeks)

Objectives:

1. Enhance Master Teachers' competence in data analysis, interpretation, and literature review through hands-on workshops and guided practice.

2. Build confidence in research writing, topic identification, and dissemination to overcome writing anxiety and topic-selection difficulties.
3. Provide practical strategies for time and workload management to address institutional barriers that hinder research engagement.
4. Strengthen Master Teachers' ability to deliver technical assistance in research mentoring, idea sharing, and professional development.

Establish a sustainable support system (peer mentoring, research clinics, and coaching) to ensure continuous improvement.

4. Conclusion

1. Master Teachers demonstrated a competent level in various domains of educational research, particularly in data collection and research question framing. However, they showed relatively lower competence in areas such as data analysis and literature review, suggesting the need for further development in analytical and theoretical integration skills.
2. Master Teachers demonstrated a moderate level of support in terms of technical assistance, especially in enhancing the learning environment, sharing ideas, and promoting professional development. While this reflects a positive level of engagement, the results also highlight the need to strengthen the structures and support mechanisms that enable Master Teachers to fulfill their roles as research mentors and instructional leaders more effectively.
3. Master Teachers face significant challenges in conducting educational research, largely due to excessive workload, limited training opportunities, and lack of time, all of which were rated as highly challenging. In addition, issues related to research confidence, such as difficulty identifying topics, writing anxiety, and interpreting findings, also hinder their research engagement. These challenges reflect both institutional barriers and personal limitations in skills and readiness.
4. There is a strong and significant correlation between Master Teachers' competence and the technical assistance provided which highlights the critical role of expertise in fostering research support and collaboration.
5. Master teachers' profile such as age, educational attainment and the number of research trainings attended showed no significant influence in their extent of technical assistance on research.

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