

Advancing Research Excellence in Philippine Basic Education to Harness Productivity: A Comprehensive Mixed-Methods Approach

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Abstract

This comprehensive mixed-methods study investigates the factors influencing research productivity among educators in the context of Philippine basic education. Drawing on a diverse range of data sources, including quantitative surveys and qualitative interviews, the research underscores the pivotal roles of leadership characteristics and institutional support in fostering a research-friendly environment within educational institutions. Quantitative analysis highlights the significant influence of effective leadership, which prioritizes research, allocates resources, and nurtures a culture of research excellence. Additionally, institutional backing in the form of research infrastructure and funding opportunities empowers educators to engage effectively in research activities. Qualitative insights from distinguished teacher-researchers reveal the intrinsic motivation, self-efficacy, and resilience driving their research pursuits. The qualitative dimension emphasizes the transformative impact of leadership and mentorship, shedding light on the guidance and support provided by leaders and mentors in elevating research capabilities. Moreover, it delves into the challenges faced by teacher-researchers, showcasing their creativity and adaptability in overcoming obstacles. These findings highlight the intricate interplay between internal attributes, external support structures, and adaptive strategies within Philippine basic education. Effective leadership and institutional support serve as foundational pillars, nurturing a research-friendly environment, while educators' intrinsic motivation and resilience act as critical driving forces. This study provides comprehensive insights into enhancing research excellence, emphasizing the need for educational institutions to foster a culture of research engagement by recognizing and implementing these insights. By doing so, institutions can elevate the quality of education and support educators' professional growth, aligning with the overarching goal of harnessing productivity within the Philippine basic education system. The study's recommendations, limitations, and future research directions further contribute to the ongoing improvement of educational practices in the Philippines and beyond.

Keywords: Leadership characteristics, Research self-efficacy, Research productivity, Educational settings, Philippines.

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Introduction

Research holds an indispensable role in contemporary societies, determining a country's capacity to innovate and provide solutions crucial for sustainability in today's knowledge-driven era. Its impact spans across various industries, encompassing agriculture, law, education, and business, and a lack of robust research frameworks can hinder progress and knowledge adaptability. A nation's research intensity often serves as a reflection of its competitive advantage (Ketels, 2013; Endovitsk, Korotkikh, & Voronova, 2020). The Philippine education system has undergone significant transformations, influenced by global factors like ASEAN integration, the widespread use of Information and Communication Technology (ICT), and globalization. The Fourth Industrial Revolution has ushered in opportunities and challenges, necessitating a reevaluation of educational practices and standards. The COVID-19 pandemic, which led to the closure of educational institutions affecting approximately 28 million students, further underscored the importance of research in crisis management (UNESCO, 2020). The implementation of the K-12 Basic Education system through Republic Act No. 10533 initiated substantial reforms, aiming to align student competencies with contemporary economic demands (Geisinger, 2016). This redesigned curriculum places a strong emphasis on evidence-based curriculum development, policy-making, and the excellence of educators (Abulencia, 2015; Sergio, 2012). The Department of Education places research at the forefront of public education in alignment with Republic Act 9155 (Official Gazette, Chapter 1, Section 7(5) Rep. Act No. 9155), and the Basic Education Research Agenda (BERA) promotes interdisciplinary research collaboration (DO No. 39, s. 2016). Despite these policies, the Philippine educational system faces significant challenges, as evidenced by PISA assessments (Punongbayan, 2019). In response, the Philippine Professional Standards for Teachers (PPST) were established, highlighting the importance of research skills in effective teaching, closely tied to the K-12 Program. However, a gap persists between the aspiration for research-driven pedagogical approaches and their practical implementation among educators. This disparity underscores the critical need for educational leaders to adopt an innovative approach that prioritizes research in pedagogy. This study, conducted by a seasoned public school educator, employs a blended methodology to examine the level of research engagement among secondary public school educators. It seeks not only to align educators' competencies with the demands of Industry 4.0 but also to guide aspiring educators by emphasizing the significance of research in the pursuit of educational excellence.

Predictors of Research Productivity

The effectiveness of leadership within academic institutions plays a pivotal role in shaping their research culture and productivity, as revealed by a study conducted by Jones, Lefoe, Harvey, and Ryland in 2012. However, recent research has shed light on the multifaceted influence of leadership on research productivity, extending beyond institutional impact to the individual level. Smith and Ulus (2018) have highlighted the positive correlation between research output and individual academic leadership, encompassing aspects of self-leadership and autonomy. Research leaders, in particular, assume a critical role in nurturing collaborative research endeavors by establishing platforms, providing essential resources, and creating a supportive environment, as emphasized by Walter, Lotsch, and Leitner in 2018. Drawing from Bandura's (1997) concept of self-efficacy, which pertains to an individual's belief in their capacity to successfully complete tasks, it becomes evident that self-efficacy wields a significant influence over motivation, cognitive resources, and behavior, especially in the context of research productivity. The investigation conducted by Richardson, Abraham, and Bond in 2015 provided compelling evidence supporting a robust association between elevated self-efficacy levels among scholars and heightened research output. Faculty members who possess a strong sense of confidence in their research capabilities tend to exhibit greater overall productivity, as indicated by findings from Blackburn, Bieber, Lawrence,

and Trautvetter in 2018. Moreover, recent research endeavors have delved into the intricate relationship between self-efficacy and leadership. Williams and Leahy (2017) argue that leadership practices that promote autonomy and empowerment can effectively enhance researchers' self-efficacy levels. Conversely, observations by Kahn and Wiener in 2020 suggest that even individuals with a strong sense of self-efficacy may face constraints in realizing their full research potential in the absence of adequate support and resources from leadership. In essence, while self-efficacy may serve as a catalyst for an individual's determination and effort, the contribution of leadership remains equally indispensable in optimizing research output by providing crucial resources and creating a conducive atmosphere for research excellence.

Gaps in Literature and Practical Aspects in the Domain of Research Productivity

In the realm of advancing research excellence in Philippine Basic Education to harness productivity, several studies have faced criticism for their over-reliance on limited or anecdotal evidence and their narrow focus on specific aspects of a broader issue. The urgency and significance of this research are accentuated, especially in the post-COVID-19 pandemic landscape, as it builds upon previously collected data and experiences. The primary aim of this study is to attain a comprehensive understanding of research productivity among secondary school educators in Region III, Philippines, along with the methodologies and policy implications that emerge from this exploration. The core objective is to establish practical approaches that can reinvigorate the research environment through the development of a model system for assessing educators' research productivity. Despite a substantial body of research dedicated to understanding determinants that affect research productivity in various sectors, a significant gap persists in the academic literature, particularly concerning basic education, especially within the realm of secondary school educators in public educational institutions. This investigation strives to offer valuable insights that will primarily support educators within the Philippine Basic Education system as they endeavor to enhance their research capabilities. The underlying hypothesis posits that creating a conducive learning environment, reinforced by adaptive and robust instructional management, can provide educators with a multitude of opportunities to improve their research skills, subsequently facilitating effective knowledge dissemination. The primary contribution of this study lies in the development of a research productivity model tailored to the specific needs of Basic Education instructors. With its policy implications, this model can serve as an indispensable tool for educational administrators and strategists, facilitating the alignment of pedagogical approaches with the overarching mission and vision of the Department of Education (DepEd). Aligned with the Education Sustainable Development Goals (SDGs), the study aims to assist educational administrators in reinvigorating their approaches to foster a research-oriented environment. The proposed framework aims to delineate fundamental components, approaches, and trajectories that contribute to research productivity, offering educators and policymakers a guide for cultivating an academic milieu focused on research excellence in Philippine Basic Education.

Objectives of the Study

In light of the existing gaps and the pressing need to address these crucial issues, the central aim of this comprehensive mixed-methods study was to formulate a robust quality assurance framework geared towards enhancing research productivity within the field of basic education. This framework was meticulously crafted by synthesizing data derived from both teachers' self-assessment of their research productivity and in-depth interviews conducted with highly productive teacher-researchers. More specifically, the study set out to accomplish the following objectives: (1) Provide an in-depth characterization of teachers' self-assessment of their research productivity; and (2) Identify and thoroughly analyze the pivotal factors that exert a significant influence on research productivity by employing a comprehensive mixed-methods approach.

Methodology

Research Design

The research design of this study employs a mixed-methods approach, combining quantitative and qualitative methods to gain a more comprehensive understanding of the research problem. Creswell and Plano-Clark (2011) define mixed methods research as a combination of quantitative and qualitative approaches that enhance the understanding of research problems beyond what each approach can achieve individually. In this study, the Concurrent Triangulation Design was used to merge themes from both the qualitative and quantitative segments, allowing for the development of common themes (Nicdao, 2015, p. 18). This approach aims for confirmation, corroboration, and cross-validation within a single study (Terrell, 2012). The quantitative component of the research utilizes a descriptive survey method adapted from Quimbo and Sulabo (2014) and Bland et al. (2005), focusing on participants' self-assessment on four indicators of research productivity. A questionnaire was employed to efficiently quantify the behavior, attitudes, preferences, opinions, and intentions of a relatively large sample of 475 teachers and school heads selected from specific School Divisions within the Department of Education in Central Luzon. The sample size was determined using the Raosoft online application, which ensured a 5% margin of error, a 95% confidence level, and a 50% distribution rate, following the recommendations of Wright (2005) and Arora (1994). This approach substantiates the significance of the chosen sample size in representing the broader teacher population of 13,140 in the entire region. For the qualitative part, the research tool used was a guided interview form with four items to capture the teacher participants' research practices and experiences. The guided interview form consisted of items with the grand tour questions on respondents' reasons for research engagement and school research practices. The interview guide was also pilot tested externally to produce useful information about research integrity and enhance the pre-assessment of research ethics and the researcher's ability to conduct data collection (Chenail in Kallio et al., 2016). The concurrent triangulation design strengthens the research by providing a holistic perspective, merging qualitative and quantitative data to validate findings and enhance the overall rigor of the study.

Respondents and Sampling Procedure

In this study, quantitative data was gathered from a group of 475 educators, encompassing both teachers and school leaders from selected schools within two School Divisions in Central Luzon of the Department of Education, Philippines. To validate and determine the appropriate sample size, the Raosoft online sample size calculator, available at <http://www.raosoft.com/samplesize.html>, was utilized. This tool was configured using specific criteria, including a 5% margin of error, a confidence level of 95%, and a response distribution assumption of 50%, in line with the recommendations of Wright (2005) and Arora (1994). These settings underscore the tool's effectiveness for determining sample sizes for web-based surveys. Considering the total regional teacher population of 13,140, the Raosoft calculator suggested a minimum sample size of 374. Consequently, the participation of 475 respondents in this study offers a robust representation of the larger educator community. As to the characteristics of the respondents demographics, categorizing them into three groups: School Leaders and Lead Educators, Master or Expert Teachers, and Teachers I-III, also referred to as Competent Teachers. The distribution among these categories was as follows: 376 participants (79.2%) were Competent Teachers, 74 (15.6%) were categorized as Expert Teachers, and 25 (5.3%) were School Administrators or Leading Educators. Additional demographic data outlined in Table 1 includes notable characteristics of the participants. A majority were female (78%), held permanent positions (98%), were predominantly in the 31-40 age bracket (31%), possessed educational qualifications such as BS/BEED/AB (40%), and had 5 to 10 years of professional experience (22%). This demographic information is essential for understanding the context and perspectives of the respondents in the study.

Ethical considerations were rigorously observed throughout this study, guaranteeing the research's integrity and ethical soundness. Ensuring participant confidentiality and anonymity was of utmost importance, especially considering the sensitive nature of data collection among educators. Personal identifiers were omitted, and responses were kept strictly confidential. In accordance with informed consent, participants were provided with comprehensive information regarding the objectives of the study and their entitlements, which encompassed the flexibility to discontinue their involvement at any moment. The study adhered to the ethical principles of beneficence and non-maleficence, guaranteeing that participants would not suffer any damage and with the intention of making a positive contribution to the knowledge of educator research productivity. The management and retention of data were in accordance with data protection legislation, ensuring that access was limited to the research team and that the privacy of individual participants was protected. The ethics committee granted sanction for the study's design and methodology, guaranteeing adherence to ethical standards and guidelines for educational research. As a result, the study's ethical rigor was upheld throughout.

Research Instrumentation

In the quantitative portion of this investigation, a thorough survey consisting of forty items was distributed to evaluate a range of metrics pertaining to the participants' research productivity. The survey was structured into four distinct sections: eight items in the first section pertained to individual attributes; twelve items in the second section examined institutional factors; ten items in the third section explored leadership qualities; and ten items in the final section pertained to self-efficacy. By basing the structure and substance of this survey on seminal works by Hanover Research (2014), Bland et al. (2015), and Quimbo & Sulabo (2014), an all-encompassing analysis of the variables that impact research productivity was guaranteed. The survey instrument was constructed with three distinct sections. In the introductory letter of Part I, the researcher informed the participants that they were explicitly asked for their assent in adherence to data privacy standards and offered them the opportunity to refrain from providing feedback for research objectives. Additionally, fundamental demographic data was gathered in this segment, encompassing age, gender, educational attainment, occupation, years of service, and prior involvement in action research. Section II was specifically designed to collect comprehensive information regarding the research outputs of the participants. In contrast, Section III explored fundamental metrics of research productivity, including but not limited to personal attributes, organizational characteristics, leadership capabilities, and research self-efficacy. The responses of the participants were recorded on a continuum that extended from 1 (indicating the lowest) to 4 (indicating the highest). To increase the validity of the survey, it was subjected to an evaluation by an expert and was subsequently modified in accordance with the feedback received. The reliability of the instrument was evaluated utilizing the Cronbach's alpha coefficient. It is worth noting that all sections of the survey exhibited satisfactory reliability, exceeding the Cronbach's alpha minimum threshold of 0.7. Ten individuals who were not part of the primary study group participated in an initial evaluation of the survey, which was administered through Google Forms. Ethical guidelines were rigorously followed; participants were duly apprised of their rights to participate voluntarily and were guaranteed complete confidentiality, in accordance with the principles outlined by Wiles in Blair (2016). The data that was gathered was thoroughly examined utilizing SPSS software. The Cronbach's alpha coefficients obtained for each segment surpassed 0.7, thereby confirming the instrument's reliability.

Results

Quantitative Assessment of Teachers' Research Productivity

Figure 1 illustrates the quantitative assessment of teachers' research productivity based on four key variables: Leadership Characteristics, Institutional Characteristics, Research Self-Efficacy, and Individual Characteristics. The mean scores provide valuable insights into how teachers perceive these variables in relation to their research productivity. The highest mean score, indicating the strongest agreement among respondents, was observed in the variable of Leadership Characteristics ($M=3.25$). This suggests that teachers recognize the pivotal role of leadership in research productivity. The positive assessment in this area underscores the significance of supportive and encouraging school administrators or superiors in fostering a conducive environment for research activities. Following closely, the second-highest mean score was attributed to Institutional Characteristics ($M=3.1$). This indicates that teachers perceive their institutional context as a contributing factor to their research productivity. Institutional characteristics might encompass resources, policies, and structures that facilitate research endeavors within the school. A positive assessment in this variable signifies the importance of a well-equipped and research-friendly school environment. In contrast, Research Self-Efficacy ($M=2.83$) received a lower mean score, suggesting that teachers may have varying levels of confidence in their research skills and abilities. This variable relates to teachers' belief in their capacity to carry out research successfully. The relatively lower score could imply that some teachers may require additional support or training to enhance their self-efficacy in research. Lastly, Individual Characteristics ($M=2.65$) received the lowest mean score among the four variables. This indicates that teachers may not attribute research productivity significantly to their individual traits or characteristics. It implies that personal qualities alone may not be the primary driving force behind research productivity for these teachers.

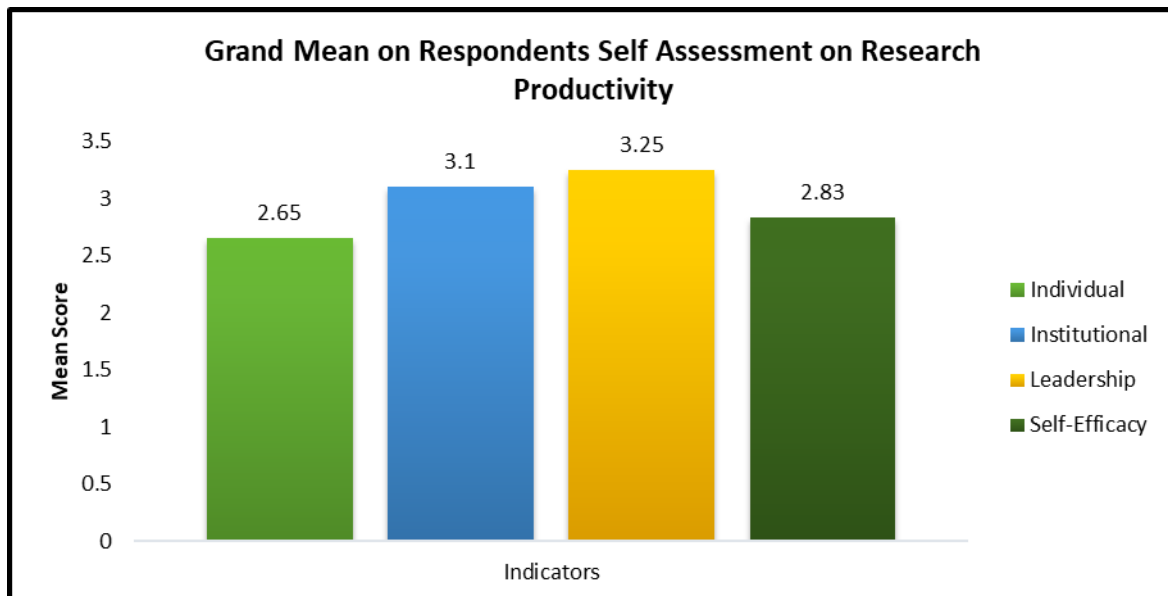


Figure 1. Grand Mean of Respondents Self- Assessment of Four Research Productivity

Based on the findings, it is evident that leadership within the school plays a crucial role in fostering a research-friendly environment and motivating teachers to engage in research activities. Institutional support and resources are also perceived as important contributors to research productivity. However, there is room for improvement in teachers' self-efficacy in research, which suggests a potential area for professional development and training initiatives. In light of these results, it is essential to consider the implications for educational institutions and policymakers. Schools should continue to prioritize and invest in leadership training and support for administrators, emphasizing the promotion of

research culture. Additionally, efforts should be made to enhance teachers' self-efficacy through targeted training programs, workshops, and mentoring opportunities. This assessment provides valuable insights into the factors influencing teachers' research productivity. While leadership and institutional characteristics are viewed positively, there is an opportunity to strengthen teachers' research self-efficacy and address individual characteristics. By doing so, educational institutions can further promote a culture of research and continuous improvement in teaching and learning.

Qualitative Result. Experiences and Practices of Distinguished Teachers in Pursuit of Becoming Productive Researchers

The qualitative analysis of this study reveals four overarching themes that capture the experiences and practices of productive teacher-researchers. These themes encompass finding encouragement through self-perceived strengths in conducting research, recognizing the pivotal roles of leaders and mentors in fostering research opportunities and strengths, addressing challenges and weaknesses in research experiences, and leveraging perceived opportunities and coping strategies in research endeavors. Teacher-researchers highlight their passion for research as a driving force and emphasize self-efficacy and positive persuasion as essential factors. They also acknowledge the significance of leadership and mentorship in elevating their research capabilities. Despite facing challenges such as time and resource constraints, they remain resilient, seek external financing, collaborate with peers, and value feedback from experts to enhance their research pursuits. In summary, Figure 2 recapitulates the emerging themes that are classified into four key categories for better understanding.

Summary of Themes and Categories

THEMES AND CATEGORIES	Category 1. Finding Encouragement (Self-Perceived Strengths on Conducting Research)	Passion Beyond Expectation Personal Policy on Self-Efficacy Persuasion is an art Professional Development enhances Expertise Intrinsic Motivatin Breaks Barriers
	Category 2. The Transcending Role of Leaders and Mentors to do Research (Opportunities and Strengths in Conducting Research)	Leadership Propels Productivity Mentoring is Twice Learning Research Expands Horizon Recognition builds Competence Honing Skills through Constant Practice Emvbracing the Culture of Exellent Practice Different Skills with One Mission
	Category 3. The Downsize of Research Experience (Challenges in Conducting Research)	Scarcity of Time and Resources Playing Multiple Roles Lack of Technical Expertise Scarcity of Finances Lack of Support from Leaders Lack of Encouragement Slow Feedback Mechanism Negative Attitude of Colleagues
	Category 4. Perceived Opportunities in Doing Research (Coping Strategies in Conducting Research)	Internal Focus/Introspection Constant Self Enhancement Fund Sourcing Collaboration

Figure 2. Summary of Themes and Categories

Category 1. Finding Encouragement (Self-Perceived Strengths on Conducting Research)

The following are some of the researchers' reasons of encouragement to continue their pursuit of productivity in research: (a) passion beyond expectation, the researchers are encouraged to pursue research if they find the drive and passion to discover new things and ideas; (b) personal policy on self-efficacy, the researchers are encouraged by believing on themselves that their capacities and skills are great contributions in the accomplishment of a certain study; (c) persuasion is an art, the researchers believe that one way to assure the success of a study, skills in the persuasion of colleagues, superiors, and respondents are necessary; (d) professional development enhances expertise, the researchers believe that professional development is a necessity to encourage continuous studies through researches; and (e) intrinsic motivation breaks barriers, the researchers believe that one of the greatest factors to successful research pursuit is the inner drive to learn more things.

Passion beyond Expectation

Participants in the study emphasized the pivotal role of passion in research, viewing it as a personal intention and a fundamental driver of productivity. They stressed that a genuine love for research fuels creativity, problem-solving, and unwavering commitment to improving students' learning experiences. According to participants, having a passion for research is a personal intention. They believe that the productivity of research begins with a great extent of love and passion to engage in a search for knowledge. The responses that follow are perceived as the most relevant responses. In my personal opinion, engaging in more productive research starts from the love of research. (Teacher Researcher b1 or Tb1). Another noted “ They will indeed become productive if they love what they (the researchers) are doing. (Teacher Researcher c1 or Tc1)”

Personal Policy on Self-Efficacy

Participants stressed the importance of self-efficacy in researching some of the challenges they face at school. They are confident that the importance of believing in themselves and pursuing their goal enabled them to continue the study until the end. The following are some of the answers in line with this argument: “My self-efficacy started from nothing. I studied through YouTube. I needed self-study on t-TEST, f-TEST, z-TEST, and other appropriate statistical treatments. [Translation], (Tj19). And one added “Furthermore, a researcher should have intrinsic motivation as he or she conducts his/her research. He/she must not only be motivated by rewards and incentives but must be intrinsically motivated. (Th5)”

Persuasion is an Art

Given the many tasks of a teacher within and outside the classroom, conducting research seems to be an extra burden for them. In order to convince the teacher to appreciate the value of the research study and to influence some colleagues, participants stressed the importance of establishing relationships between colleagues. The following are some of the participants' explanations. One said “I need to convince the Master Teacher first on the importance of research, especially action research, which I think focuses on simple problems. [Translation], (Tk6). The other added “I always believe that I need to start from the basic steps of talking with the respondents genuinely to win them prior to the conduct of research. [Translation], (Tk8)

Professional Development Enhances Expertise

Participants recognized the emergence of different pedagogies and strategies in the changing society and in the teaching and learning environment. For them, research encourages teachers as facilitators of learning to continue to improve personally to be competent and to excel professionally. They also believe that professional development allows teachers-researchers to become aware of the evolving trends and orientation of the

Academy as a continuous process. The comments are set out below to verify this point. “Research also connects you to sources of information and a network of professional support. As my practice, I always conduct academic research. Academic research is a garland and a key to success in your professional career. (Ta3)”. One noted “Research also helps a teacher to improve his or her knowledge. (Ta4)”, and the other confirmed “Research also helps in conceiving new ideas. It enormously enriches and enlightens teaching and pedagogy. It helps us understand the issues and concerns in our field of specialization. (Ta5)” On the part of teaching, a teacher-researcher should be ready to teach the students (of) some skills where (that) should have been introduced back in their lower years of schooling like basic reading, writing, critical thinking, etc. because they really lack these aptitudes (that) are considered necessary in research writing. (Tf3)

Intrinsic Motivation Breaks Barriers

Participants who are aware of the complexity of the tasks, as facilitators of learning, have identified the need for internal motivation to pursue classroom research. For some teachers, doing action research is not rewarding from the start. For them, a teacher-researcher may find his/her works interesting and enjoyable when rewarded or recognized for a job well done. Here are some of the teacher-researchers comments. “A fixed mindset is considered when teachers must immerse themselves into research writing. (Te3)”. One noted “Moreover, I have learned that it is very essential to possess a strong, positive mindset, and great motivation towards research. Having these qualities will be the (first) starting point. (Th3)”. The other explained “In my disposition, I believe that conducting or doing research must start from within. As a research enthusiast, I need to focus on my interest which is teaching so I do research on teaching. [Translation], (Tj1).”

Category 2. Transcending Role of Leaders and Mentors to do Research

A Positive and authoritative leadership of superiors and colleagues plays an important role in the attainment of organizational success. Similarly with research studies, the researchers are convinced that leaders and mentors play an important role in successful research. The following presents the importance of transcending role of leaders and mentors to do research: (a) Leadership propels productivity, the researchers believe that the positive and kind support from their superiors or school administrators greatly contribute to the success of the research study; (b) Mentoring is twice learning, the researchers believe that mentoring can emanate from their fellow colleagues, and that continuous peer mentoring is a great opportunity to learn that eventually contributes to the success of a study; (c) research expands horizon, all throughout the conduct of research, the researchers are convinced that every problem they face, they can share ideas and insights, therefore expanding their horizons; (d) recognition builds competence, the researchers believe that reward systems like promotions and salary increase are great motivations to pursue research; (e) honing skills through constant practice, the researchers agreed that continuous practice of skills in research, attending seminars, and trainings would greatly contribute to a successful and productive research study; (f) embracing the culture of excellent practice, graduate subjects lead to the fundamentals and the complexities of research processes that the researchers are headed to embrace; and (g) different skills with one mission, researchers acknowledge the fact that they need to build a network that would address similar concerns for the productivity of research studies.

Leadership Propels Productivity

Teacher participants identified the critical role of support from their school head or administrator. This support took the form of emotional and material support, which helped them achieve their search result as supported by the following comments. “Probably, in our School, our school head or principal is very supportive in terms of research. He always encourages me to do research. The administration helped me accomplished the three research, especially the breakdown in the school gardening.

(Tb5)”, in like manner the other explained “It needs more financial assistance. The researcher must have a collaborative effort with the school head. That is one factor for a more productive research. (Tb6). Further “In terms of support, 100% of the School is supportive to me as school coordinator, and then in the process of productivity and research, getting suggestion and comments from my principal is very helpful for me...so I have this difficulty in internet connection, he will allow me to use the internet connection during my vacant time in his office, so there is no problem. [Translation], (Tb9).”

Mentoring is Twice Learning

For neophyte researchers, it is difficult to conduct a research study coupled with daily classroom routines. Participants identified the need for constant guidance from peers in conducting research studies within and outside the classroom. They also stressed the need for consistent mentor follow-up, as reflected in the following comments: “Teachers will need someone who can do the mentoring or constant follow-up. There is a lot of training given to teachers regarding this matter. What is missing is the mentoring part. If we can put much effort into this aspect, teachers may become motivated to write their research until the end. (Td4)”. Seconded by the other “Assign a teacher as a mentor to a group of teachers for actual mentoring. There must be a specific day and time in a week where the mentoring will happen. When teachers know that someone will check their output and someone will help them in their challenges, they will be motivated to continue. (Td5)”, and further asserted “The experiences and practices he/she gains from seminars and workshops and the comments he/she gets from the research panelists and mentors during the presentation of his/ her research proposal would help a lot in implementing and completing his/ her research. (Tg4).”

Research Expands Horizon

Participating teachers-researchers have identified that one of the research by-products is an opportunity to connect with other researchers outside a station. It allowed participants to grow professionally as they find solutions to their problems in and out of the classroom. The experiences of the researchers in the resolution of the crisis allowed the participants to link with other experts who share the same feelings. The following comments confirm this point. “Research also helps you find a solution, particular to problems arising from your classroom, or teaching, or in your school. This will help identify the starting point for further teaching and learning and ensure that each student is given learning opportunities and challenges. Research also connects you to sources of information and a professional support network. (Ta2)”. The other stressed “Conducting research enables me to establish stronger linkages and collaboration with experts. It made me more confident to talk about my research topic with my fellow teachers. (Tb2). “ and one said “I have experienced presenting my research in the Division Office, and I gained more ideas from the panel on how I will improve my proposal. It gave me more encouragement to attend action research and statistical analysis training since comments are more on the research methods and data analysis. (Tb3)”.

Recognition builds Competence

According to participants, adequate recognition and a comprehensive reward mechanism motivate teachers-researchers to conduct research studies. The comments that follow reflect this sentiment. One said “I think the appreciation coming from the higher authority regarding the presence of the researcher inside the educational institution and the experience of making important...making them one of the gems of the institution will make them more valued in terms of their ability as researchers. (Ti2)”, the other explained “Conducting research has a big impact on my promotion. I experienced winning moments. It boosts my confidence, my engagement in research, and then – eventually I got the spot to hold the highest position in the congressional research. (Tj4). “Based on experience, if they (researchers) will be engaged in research, they might be able to use

this for promotion purposes. (Tk4). In like manner, one also posited “With my principal, if you are going to do research, you will receive incentives. If you’re motivated externally you will get something. Definitely you will be encouraged. (Tk14).”

Honing Skills through Constant Practice

Participants believed that improving skills through research capacity building is a big factor to engage in research work, especially for the new researchers. The comments below demonstrate this. In my practices, researchers, sharing research outputs in the cluster is very important to me. We have the essential cluster capability seminar with the research cluster coordinator. It helped me a lot on how I am going to improve, and I also share the things I encounter in research making. So, it is one of the practices that helps me a lot. (Tb11). One also suggested “Also, teachers may become productive in research once they are fully capacitated with doing research. Even though schools provide teacher training, it is still a known fact that not everything can be remembered during training. (Td3).” One respondent noted “Participate in research-related meetings (cluster research meeting); try to write action/ applied research. (Te2)”. And one finally informed “For a teacher-researcher to become productive in research, he should continuously hone his skills in research through seminars and training and at least strive for a publication. (Tf2)”

Embracing the Culture of Excellent Practice

The very active culture of research in graduate studies has helped to improve the curiosity of participating teachers and the basic skills in carrying out the research. The different research outputs required in the enrolled subjects encourage the teachers to engage in research and ultimately develop their techniques and practices on research methodologies. This is explained by the comments below. “Enrolling in graduate school where research is part of the culture will make you amazed by the things you may learn. (Td13)”, one said “I learned these basic skills on research from Graduate School (Tb15). “ and finally, the other respondent pointed out “At the same time, our colleagues are heeding the call on the said initiatives by producing action research, attending research conferences, and being engaged in graduate school research tasks. (Th7)”

Different Skills with One Mission

Working with colleagues was seen by participants as useful in carrying out a mission: the productivity of research. Sharing the same passion to solve problems inside and outside the classroom gave teachers researchers an opportunity to work together. The following are some of the answers in line with this argument. “It enables teachers to share their best practices and tandem with teachers with different skills .These good practices should be shared and documented. (Ti16).” One confirmed “I conducted capacity building, especially for teachers who do not like research. I call it “Beki Point?” We focused on contextualizing the problems and the technicalities of research. (Tj10)”

Category 3. The Downsize of Research Experiences (Challenges and Weaknesses in Conducting Research)

Researchers know that they can face challenges in conducting their study and must avoid them to assure productive and positive results of research. They are as follows: (a) scarcity of time and resources, researchers sometimes do not have enough time to finish their research; (b) playing multiple roles, researchers sometimes have multiple roles in school and outside school; (c) lack of technical expertise, researchers sometimes do not have the fundamental knowledge or background in conducting research studies; (d) lack of finances, researchers sometimes lack finances to continue their researches; (e) lack of support from leaders, researchers sometimes do not receive emotional supports from superiors or administrators; (f) slow feedback mechanism, researchers sometimes find it illogical to continue their research as the processing of research approval and other documents is very slow ; and (g) negative attitude of colleagues, researchers sometimes have pessimistic perspectives towards conducting research studies.

Scarcity of Time and Resources

Often researchers may find difficulties with time allotment and the availability of resources to carry out the study. The responses/data gathered by the researcher to demonstrate the demand for time and resources constraints as issues in conducting successful research studies are presented below. “Time management is the number one challenge that I encounter. Number two is financial. Third, the availability of the respondents of the study. (Ta9)”, “Time management is a challenge. We are teachers teaching 8 hours a day in our school. We need a lot of time to focus on our research. (Ta19), “We tend to lose the inner drive to research because we are bombarded with so much work from the department, so we prioritize our function: to teach. We also need more time and support for resources from our school head. (Tj6), “ Being a student, a mother, a wife, and a public-school teacher, I considered time as the most challenging factor in conducting research. (Tc5), and lastly, “Honestly, lack of time is a challenge because of so many workloads. My Saturdays and Sundays are devoted to my family. (Tj21)”

Playing Multiple Roles

In general, teachers, especially in public schools, perform multiple functions within the school as teachers or outside the school as parents or brothers and sisters. The multi-role-play contributes to the disadvantages of successful engagement in research studies. The following answers justify the claim. One said “Being a student, a mother, a wife and a public-school teacher, I considered time as the most challenging factor in conducting research. (Tc5)”, “Aside from that, there are other tasks that I must attend to because I also have different designations in our school which also requires paper works, besides my teaching loads. (Tf8)”. Additionally, in the last phase of my research, I have experienced health concerns causing a delay on my timetable. Because I have been performing different huge roles, there was one point when I was almost admitted to the hospital for being overworked and over pressured. (Th9)

Lack of Technical Expertise

It is observed that some newbie teacher-researchers do not have the competence to conduct research. This problem is seen as the disadvantage of research by most respondents as evident from the responses below. “I encountered challenges and difficulties in Statistics, computing, interpreting data. Maybe, the division office can give more ideas on computing the Statistics in action research. (Tb14)”, “Another is the difficulty in getting some review of literature related to the topic of the proposal. Additionally the limited vocabulary and little knowledge on technicalities in writing the research contribute to the problem. These are only few to consider. (Tg7), “From the three schools where I came from, teachers lack the drive-in researching because they don’t know how. They lack the skills. (Tj5)”.

Lack of Finances

It is a common notion that teachers have low salaries. Thus, researchers often encounter financial problems when it comes to the conduct of their researches. This is a real disadvantage of conducting successful research studies as evident from the responses below. “When it comes to supporting (for teacher researchers), it is only emotional support. Teacher researchers would tend to spend their own money for their research studies. It’s only emotional support and nothing. (Ta8)”, “Time management is the number one challenge that I encounter. Number two is financial. Third, the availability of the respondents of the study. (Ta9)”, But they (researchers) have this fear that they cannot conduct or finish research. I don’t know but that is their reason that it costs time. It can give the researchers worries in terms of finances, you see the money instinct. That is one of the reasons I have seen from my co-teachers during that time. (Tb8)

Lack of Support from Leaders

Teaching is a work that requires patience. The school's superiors and faculty members have many workloads. The numerous activities of school heads can lead to a lack of leadership support for researchers. This scenario is seen as a disadvantage of conducting research studies according to the answers given. "The school heads only give moral support (lack of finance and other resources) like when I need to visit other schools to float the questionnaires. [Translation], (Tc7)", "As a teacher researcher, I encountered the following challenges: First, it is difficult to encourage teacher to be involved in an innovation/ research when the school head is not inclined with. (Te4)", "Because my first school principal was not really supportive in doing research. Eventually, she transferred to other school. When I try to discuss the benefits of research, the beauty of research, she did not care. [Translation], (Tk20)m," "I was encouraged (on engaging research despite of support from superiors) from my past three schools. [Translation], (Tj22)

Slow Feedback Mechanism

Due to the slow pace of research study processes for approval, some teacher researchers lose patient in continuing the conduct of research. This is a disadvantage of the research engagement, as shown by the following responses. I think because we only have the SEPS, especially in terms of research, the transaction from one stage to another is slow. The challenge is on how to make the transaction and processing faster in the division to encourage researchers to write for more. [Translation], (Ti11) . "The process of research for other teachers is slow because panelist dig a lot of details to the extent that researchers don't want to continue anymore. (Ti12) ", "It took me 4 years to finish my thesis in a master's program (as responses from superiors/ advisers are slowly given). It was lengthy. (Ti14)."

Negative Attitude of Colleagues

Other fellow teachers are discouraged from conducting research as aspiring researchers perceive that research has no benefit in career advancement. The following answers justify the claim. "My colleagues are very pessimistic about doing research. It seems that it's not their priority. (Tj18)," "The most difficult challenge that I encountered in producing research is the kind of negative mental model that my co-teachers have on research as an additional task. The mental model that they will not be able to get something from research. Mental model that research is a burden on their part that they can exist without research. (Tk18), "According to my colleagues, they existed for almost years in the system without research and we got very satisfactory rating and here you are, (inaudible) in the public school system, you are going to teach us, encourage us, to do research. (Tk7)

Category 4. Perceived Opportunities in Doing Research (Coping Mechanism and Strategies in Conducting Research)

Research opens up opportunities. Researchers are aware that research studies help in the development of different aspects of life. The opportunities for researchers are enumerated as (a) development of time management skills, researchers develop their sense of time management when engaging in research studies; (b) internal focus/ introspection, researchers enhance their focus and self-awareness as they engage in research; (c) constant self-enhancement, when researchers engage in research studies, they continuously enhance their skills in reading and writing for the gathering of data; (d) creativity in fund sourcing, researchers develop their convincing skills by fund sourcing through solicitations; (e) Engagement through Collaboration, researchers develop their interpersonal and collaborative skill.

Development of Time Management Skills

The conduct of research requires skill in time management. Teacher researchers are often bombarded with a lot of workload at school; therefore, time management is necessary to succeed in research. Conducting research studies is seen as an opportunity for development. The following answers highlight the contribution of research to the development of time management skills. “As a researcher, managing my time is very crucial. Prioritization is really the key to achieve something (which I learned from engaging to a research study). [Translation], (Tc8) “, “Try to know the teachers' weaknesses (in doing so, you as a researcher excellently allot time by focusing on their weaknesses, you are being excellent in time management skills) so that it will be easier for you on how to start talking research with them. (Te8)”, ““I usually stay longer at school to do work-related tasks and I bring research works at home. In that way, I can work at school properly while engaging in a research study. Therefore, I manage my time. (Tf9) “, “To cope with all these difficulties, of course as a teacher researcher, extra time should be given to the proposal for its implementation and completion. (Tg9).” Focus and time management should be applied (in doing research studies). Also, I would always ask others' assistance in terms of grammar and content (in doing research). (Tg10)

Internal Focus/Introspection

Deep attention and self-awareness are some of the abilities developed by engaging in a research study. Participation in a research study is considered an opportunity to enhance internal attention and introspection. The following answers justify the claim. (Towards a successful research completion) First is, focus in problem and avoid distraction. The third is the adaptability to the research environment. (Ta11). “All problems that we are encountering at the moment have particular solutions (particularly in conducting research studies). But the answer you can give to your context will be different to the solution provided to their context. If you love your school definitely, you will do everything to make your school the best school (through deep focus and self-awareness in doing school-related tasks) and at the same time a productive one but you cannot make it possible if you are not going to help the school or the people in your community to achieve that one. (Tk24). “ And for you to have that, you need to gather evidence-based data. That will happen if you are

Constant Self-Enhancement

The conduct of research studies continuously requires self-enhancement on the part of the teacher-researchers. The research is considered a self-enrichment opportunity validated by the following answers. The first thing that will help a researcher is constant reading (therefore, self enhancement). Researchers may calibrate themselves through constant reading of pieces of research that are related to the topic that they are investigating. Reading will provide more information to become more competent. (Td8), “I always advise to the non-productive researchers that research is a part of teaching and learning. Just like in the lesson plan where teachers have to do a reflection of what transpired in the lesson, I think, we need to do the same in doing research. We need to reflect more since as teachers in the 21st century, we need to be more reflective (therefore, trying to improve ourselves). (Ta13)

Creativity in Fund Sourcing

Research requires a large amount of money. It would be an excellent opportunity for teacher researchers to develop skills in the provision of funds to make the study successful. Research is seen as an opportunity to develop this skill. The following answers justify this claim. “If they encounter financial challenges, they have to find some sponsors especially in the Department of Education. We have the Basic Education Research Program that finances good research. (Ta14)”, “We establish research partnership for funding. We requested the Local Government Unit, and other government

agencies to assist us by presenting our research proposals. (Ta4)”, “I have experienced to be part of a research project with State Universities and Colleges. They provided me fund to do research on K-12 Cohort Graduates. (T5a), “I was tapped as member of a research project on students’ nutritional status funded by a government agency. I was able to get honoraria and communication allowance. (T6a).”

Engagement through Collaboration.

Participating in research studies contributes greatly to the development of collaborative and interpersonal skills among researchers. Participating in research studies develops it. This statement is justified by the responses below. Collaboration is very important in school. I usually give the idea (on research) and the rest of my colleagues and other leaders will help identify a way to sustain it. (Tb18) Second, it is suggested that we need to look for a pool of friends or researchers to exchange ideas and best practices that might apply to our challenges. (Td9), “With my research engagement, our school have established collaboration with one Teacher Education Institution for research purposes of pre-service teachers’ skills on PPST. I was tapped as the focal person. (Tb1)

Discussion

The study's quantitative analysis underscores the critical influence of leadership characteristics and institutional support on teachers' research productivity, aligning with existing literature in emphasizing their significance. Effective leadership that fosters a research-friendly culture and allocates resources is pivotal. Institutional backing, including research infrastructure and funding, empowers educators. While research self-efficacy and individual characteristics play a role, they are relatively less influential. In the qualitative analysis, four themes emerge from teacher-researchers' experiences: leveraging strengths, valuing leadership and mentorship, addressing challenges, and capitalizing on opportunities. Passion and self-efficacy drive their research. They recognize leadership and mentorship's role, overcoming challenges creatively. Teacher-researchers continuously improve and collaborate within professional networks. These findings highlight the multifaceted nature of the teacher-researcher's journey. While leadership, mentorship, and institutional support are crucial, personal attributes, resilience, and creative problem-solving also matter. Nurturing a research-friendly environment, promoting professional development, and fostering collaboration are essential. Educational institutions can enhance research engagement, benefiting education quality and educators' growth. This study presents a holistic perspective on the factors influencing research productivity among educators in the context of Philippine basic education. Both the quantitative and qualitative analyses converge on the central role of leadership characteristics, institutional support, self-efficacy, and collaborative opportunities in advancing research excellence in this setting. The quantitative assessment firmly establishes the significance of leadership characteristics and institutional support as primary drivers of teachers' research productivity. Effective leadership that prioritizes research, allocates resources, and fosters a research-friendly culture is crucial. Simultaneously, institutional backing, in the form of research infrastructure and funding opportunities, empowers teachers to engage effectively in research activities. This quantitative dimension quantifies the importance of these factors. Complementing the quantitative findings, the qualitative analysis sheds light on the experiences and practices of distinguished teacher-researchers. It reveals the passion and self-efficacy that drive their research pursuits, highlighting their intrinsic motivation and belief in their research capabilities. The qualitative data also underscores the transcending role of leadership and mentorship, emphasizing the guidance and support provided by leaders and mentors in elevating research capabilities. However, the qualitative analysis goes beyond these positive aspects and delves into the challenges faced by teacher-researchers, such as time constraints, financial limitations, and negative attitudes from colleagues. It showcases the

resilience and creativity exhibited by these educators in overcoming these obstacles. They adapt by sourcing funds creatively, developing time management skills, and remaining committed to their research endeavors. Furthermore, the qualitative dimension illuminates the importance of self-awareness and self-improvement through research, fostering collaboration and the exchange of ideas within professional networks. These findings emphasize the multifaceted nature of the teacher-researcher's journey and the diverse factors that contribute to their success.

In integrating these results, it becomes evident that the pursuit of research excellence in Philippine basic education requires a multi-dimensional approach. Effective leadership and institutional support form the foundational pillars, providing the necessary resources and nurturing a research-friendly environment. At the same time, teachers' intrinsic motivation, self-efficacy, and resilience are critical driving forces, propelling them to engage in research activities despite challenges. The study's comprehensive mixed-methods approach highlights the interplay between internal attributes, external support structures, and adaptive strategies within the context of Philippine basic education. By recognizing and addressing these various facets, educational institutions can effectively promote a culture of research excellence. This, in turn, holds the potential to elevate the quality of education and facilitate the professional growth of educators, aligning with the overarching goal of harnessing productivity in the Philippine basic education system.

The findings of this study align with existing literature on research productivity among educators, both in the Philippines and globally. Previous research has consistently emphasized the pivotal role of effective leadership and institutional support in fostering a research-friendly environment within educational institutions (Bryman, 2016; Fullan, 2014). The quantitative results of this study, which highlight the significant influence of leadership characteristics and institutional backing, reinforce these established principles (Hargreaves & Fullan, 2012). Furthermore, the qualitative insights from distinguished teacher-researchers resonate with the existing literature on the importance of intrinsic motivation and self-efficacy in driving educators' research engagement (Bandura, 1997; Deci & Ryan, 2000). The qualitative findings underscore the transformative impact of leadership and mentorship, consistent with prior research that has emphasized the role of mentors and supportive leaders in nurturing educators' research capabilities (Bullough, 2014; Ingersoll & Strong, 2011). Additionally, the qualitative dimension highlights the resilience and adaptability of teacher-researchers in overcoming challenges, a theme also found in the literature on educators' research endeavors (Creswell & Creswell, 2017; Hammersley-Martens & Neal, 2019). This study's results corroborate the existing literature, emphasizing the need for effective leadership, institutional support, intrinsic motivation, and mentorship to enhance research productivity among educators. By recognizing these factors and their interplay, educational institutions can foster a research-friendly environment that promotes a culture of research excellence, ultimately elevating the quality of education and supporting educators' professional growth in the context of Philippine basic education.

Conclusion

This comprehensive mixed-methods study on advancing research excellence in Philippine basic education provides valuable insights into the multifaceted factors influencing educators' research productivity. The research findings underscore the critical significance of effective leadership characteristics and institutional support in fostering a research-friendly environment within educational institutions. These factors serve as foundational pillars, providing resources and nurturing a culture of research excellence. Additionally, the study highlights the intrinsic motivation, self-efficacy, and resilience of teacher-researchers as essential driving forces behind their research endeavors, emphasizing their ability to overcome challenges creatively. Furthermore, the qualitative

dimension sheds light on the transformative role of leadership and mentorship in elevating research capabilities, as well as the importance of self-awareness, self-improvement, and collaboration within professional networks. These findings collectively emphasize the complex and interrelated nature of the teacher-researcher's journey. Incorporating these results, it is evident that promoting research excellence in Philippine basic education requires a comprehensive approach that addresses both internal attributes and external support structures. By fostering effective leadership, providing institutional backing, nurturing intrinsic motivation, and offering mentorship, educational institutions can create an environment conducive to research engagement. This, in turn, has the potential to enhance the quality of education and facilitate the professional growth of educators, ultimately contributing to harnessing productivity within the Philippine basic education system. These findings align with existing literature on research productivity among educators and reinforce the importance of recognized principles. By recognizing and implementing these insights, educational institutions can take proactive steps towards promoting a culture of research excellence, benefitting both educators and the broader educational landscape in the Philippines.

Recommendations, Limitations, and Future Research Directions

Based on the findings of this study, several recommendations can be made to enhance research excellence in Philippine basic education. Firstly, educational institutions should prioritize the development of effective leadership that promotes research-friendly cultures and allocates resources for research activities. Additionally, they should establish and strengthen institutional support mechanisms, including research infrastructure and funding opportunities, to empower educators in their research pursuits. Moreover, efforts should be made to nurture teachers' intrinsic motivation, self-efficacy, and resilience through professional development programs and mentorship initiatives. Lastly, collaboration within professional networks should be encouraged to facilitate knowledge exchange and mutual support among teacher-researchers. It is important to acknowledge the limitations of this study. Firstly, the research was conducted within a specific region of the Philippines, and the findings may not fully represent the diversity of the entire nation. Additionally, the study relied on self-reported data from educators, which may be subject to response bias. Furthermore, the research design, while comprehensive, cannot establish causal relationships between variables. Finally, the study did not explore the perspectives of students or parents, which could provide additional insights into the impact of research productivity on educational outcomes. To build on this study's findings, future research could expand its scope to include a more extensive and diverse sample of educators from various regions of the Philippines. Longitudinal studies could also be conducted to examine the long-term impact of research engagement on educational outcomes. Furthermore, exploring the perspectives of students and parents regarding the influence of teacher-researchers on the quality of education could provide a more comprehensive understanding of the subject. Additionally, comparative studies between the Philippines and other countries could offer valuable insights into best practices for promoting research excellence in basic education. Finally, research on innovative strategies and interventions to enhance leadership characteristics, institutional support, and teacher-researcher attributes could contribute to the ongoing improvement of the Philippine educational system.

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