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## Research Article

### Peer-Led Team Learning: A Strategy to Enhance Research Productivity and Competence

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#### ABSTRACT

Research productivity and competence of teachers play a critical role in promoting evidence-based teaching practices and enhancing the quality of education. Hence, this study aimed to determine the effectiveness of Peer-Led Team Learning (PLTL) in enhancing teachers' research productivity and competence. A purposive sampling technique was used to select the 110 teacher participants and the pre-experimental research design was utilized. Statistical treatment such as frequencies, percentages, and weighted mean were used to determine research productivity and teachers' competence. Results revealed that more than 98% (108) out of 110 teacher participants had completed their studies, and teachers possess a high level of competence in action research (AR). Competence about context and rationale (60.91%), proposed innovation, intervention, strategy (67.27%), action research questions (56.36%), action research methods (60.00%), results and discussion (54.55%), and work plan (64.55%) are all in a high level of competence. About 44.54% (49) out of 110 teacher participants were in a moderate level of competence, and almost 2% still in a low level of AR competence. The research output is the best indicator and the most concrete manifestation that the teachers are capable and competent in writing and conducting AR. Completed AR output is a positive determinant of the teachers' knowledge and skills in action research. Likewise, PLTL is an effective strategy for enhancing teachers' competence in AR. Recommended that (1) AR competency-enhancement training through Action Research Kumustahan, Assessment, and Technical Assistance (AR-KATA) program be conducted in schools; (2) District-organized and school-based research activities utilizing PLTL strategy be implemented and sustained; and (3) Seminars, training, and development research work-related experience and accomplishments of the teachers be included as one of the criteria in selecting and hiring of teachers.

**Keywords:** Competence, Enhance, Productivity, Research, Team Learning

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## Introduction

Education system greatly relies on research. The role of research in our education system is crucial as it helps us gain a more profound understanding of various subjects and provides us with extensive knowledge related to health, education, technology, and business. One type of research that is commonly heard of in educational circles is discipline inquiry research or action research, which involves teachers or groups of teachers conducting research in a classroom or school setting with the objective of enhancing teaching practices. Action research discloses how teachers' classroom instruction evolves to impact learners. Hence, conducting research develops critical thinking skills and provide useful information that we can apply in our daily life.

In the Philippines, Republic Act No. 9155, which is also known as the "Basic Education Governance Act of 2001", underscored the role of research in the management and administration of the basic education system. In accordance with this obligation, the Department of Education (DepEd) has made efforts to reinforce research within the department. DepEd provides guidance to its personnel and stakeholders in the conduct of educational research and in the utilization of results for planning, decision-making, and program development. DepEd also ensures that its actions are informed by sound and relevant evidence from research. In addition, the established policy development process (DepEd Order 16, 2017) with the agency leverages the use of research-based evidence.

Cabaruglo (2014) provides evidence that research plays a crucial role in the professional growth and development of teachers. It helps to enhance their teaching skills, increase self-awareness, improve problem-solving abilities, and promote independent learning. When teachers conduct action research studies, their main objective is typically to acquire a deeper comprehension of the educational process. The ultimate goal is to enhance the efficiency and effectiveness of their teaching practices and to take on responsibility for improving their own classroom instruction and elevating their students' learning (Upmacis, 2021). It signifies that teachers' engagement in research fosters

critical thinking and analytical skills that enable them to discover what went wrong and what could be done to address the problem in the classroom.

However, a substantial proportion of teachers lack the required expertise and aptitude to carry out action research (Mejia et al., 2020). Based on the data gathered by the researchers, there are 620 master teachers in the public elementary and secondary schools in the entire Division of Bohol, but only 36 or 6% of them submitted a completed action research study during the school year 2017-2018 until 2020-2021.

Tupas (2019) also disclosed that public school teachers had displayed disinterest in participating in action research due to a range of factors, including heavy workloads, inadequate resources, and the intricacies of the research process. Given their additional responsibilities and duties, many teachers who have embarked on research projects are unable to bring them to completion. Thus, teachers' engagement and competence in conducting action research really need enhancement.

One of the most effective methods for improving teachers' research competence is through small-group learning. This type of learning is widely regarded as a top-tier teaching strategy for enhancing learning outcomes (Drane, 2014). Peer-Led Team Learning (PLTL) is a particular type of small-group learning that encourages increased interactions between Peer-Leaders and learners. This results in heightened interest and engagement among the learners (Tsuei, 2011). PLTL is distinguished by a social learning framework in which knowledgeable Peer-Leaders assist less experienced peers in developing a conceptual understanding of research processes through group-oriented discussions (Quitadamo et al., 2009). In this study, Peer-leaders are the teachers who have trained in conducting action research and have successfully completed the research study.

With an end view of helping teachers to improve classroom teaching practices, the researchers are motivated to examine the contribution and effectiveness of PLTL in enhancing the competence of teachers in conducting action research. The researchers believed that

master teachers and the teacher-researchers of the Schools Division of Bohol would be benefited from the results of the study. This will also provide guidance to the Schools Division Research Committee in improving the technical assistance mechanisms at the school and district levels. This study will also seek to contextualize its findings to produce knowledge that is applicable outside of the research setting.

### **Action Research Questions**

The study aimed to determine the effectiveness of Peer-Led Team Learning (PLTL) in enhancing the research productivity and competence of teachers in the Districts of Batuan, Guindulman, San Miguel, and Trinidad, Schools Division of Bohol, within the First Quarter of the School Year 2022-2023.

### **Intervention and Strategy**

In the search for more effective ways to enhance teachers' competence in research, the researchers employ Peer-led Team Learning (PLTL). PTL is an instructional method intended to improve learning engagement and skills. PLTL is a specific form of small group learning which usually serves as a supplement to traditional lectures. PLTL sessions are typically 1.5 to 2 hours long, during which time teachers work with similar developmental levels socially negotiate to provide a framework that encourages questioning, analysis, and discussion among group members (Quitadamo et al., 2009). Peer leaders are not expected to be content experts or surrogate instructors; rather, they are co-teachers who have been trained in conducting action research and successfully completed a research study.

The strategy adopted the Action Research Kumustahan, Assessment, and Technical Assistance (ARKATA) program. This was a research innovation of the Schools Division of Bohol Research and Planning Section of the School Governance and Operations Division. This was implemented effective school year 2021-2022, which complements the SDO-Bohol research agenda. ARKATA program consists of two (2) phases. Phase 1 is ARKATA 1, which provides guidance and technical assistance to the researchers in writing their research proposals, while ARKATA 2 will focus on how teacher-

researches formulate and submit a completed action research study based on the elements required by the Department.

### **Pre-implementation Phase**

Peer-Led Team Learning (PLTL) usually serves as a supplement to teachers' training and or seminar workshops in action research. In PLTL, 4-8 teachers work together on a packet designed to improve research skills facilitated by a Peer Leader. Peer leaders will be recruited from the pool of teachers in the selected Districts of the Schools Division of Bohol that have successfully completed an action research study. Potential peer leaders shall submit a written application and will be subjected to an interview with the Schools Division Research Committee (SDRC). Furthermore, the researchers will secure free, prior, and informed consent from the identified teacher-participants of Batuan, Guindulman, San Miguel, and Trinidad Districts. The research competence of the teacher-researchers will be measured prior to the experiment period. The participants were given a questionnaire to assess their level of competence before the treatment.

### **Implementation Phase**

At the onset of the first quarter of SY 2022-2023, (1) an action research capability building and workshop will be conducted by the Schools Division Research Committee (SDRC) through the Division Research Technical Working Group to the identified master teachers of the Districts of Batuan, Guindulman, San Miguel, and Trinidad in order to ensure that the research themes and research topics should align with the research agenda of DepEd. Research Agenda contains a list of priority education research areas to guide teachers in conducting research.

After conducting capability building and workshop, the researchers and the identified master teacher-participants will meet for the first session of the (2) Action Research Kumustahan, Assessment and Technical Assistance (AR-KATA 1) to provide help and guidance to the teacher-researchers on how to formulate their action research proposals guided with the

elements of writing action research, formatting, and address difficulties in conducting action research studies. Discussions would require conceptual understanding and contextualizing the parts of action research proposal elements emphasized by the research management and guide. The PLs were given the detailed AR elements and formatting guide to be utilized during their meetings.

They were scheduling PLTL sessions with many participants may be quite challenging. The researchers will assign four to eight teachers to a specific peer group with the selected peer leaders based on the schedule availability. Teachers will work with their assigned groups for the entire term unless significant problems require transfer to another group. (3) Each group of teacher-researchers will meet with the Peer Leaders every week during the study to discuss pre-assigned homework and workshop materials needed for submitting their action research proposals. Weekly meetings will be unstructured, with agreement among group members of their preferred time.

The researchers will then conduct a (4) daylong session with the selected Peer Leaders to provide technical assistance in addressing fundamental and existing issues and challenges identified by the participants highlighting their particular process of conducting action research studies and providing them the needed materials describing the research process. The Peer Leaders were trained to ensure that the teacher researchers were actively and productively engaged with each other and with the appropriate instructional resources. Within the duration of the experiment, (5) the Peer Leaders will provide an update to the Division Research Committee in a word document that is a written journal account of the progress of the teachers' action research proposal.

Finally, a second session of the (6) Action Research Kumustahan, Assessment and Technical Assistance (AR-KATA 2) will be conducted to provide help and guidance provided to the teacher-researchers on how to complete their action research studies guided by the four-step Action Research Spiral (Reflect-Plan-Act-Observe) in their research. Likewise, the DRC, through the Research Technical Working Group (TWG), will help the teacher-researchers formulate the research reports that contribute to their professional development and the welfare of their peers, decision-makers, and stakeholders. A PowerPoint presentation was provided to the team for them to use during these sessions. After implementing the strategy, the researchers will then measure the teachers' research competence.

### ***Post-implementation***

The success of the implementation of the PLTL in conducting action research will be evaluated by the DRC utilizing the Quality Control Checklist for Completed Action Research (QCC) to evaluate action research reports. The study results will be communicated to the teachers, School Heads, and Division Supervisors through a research conference and research forum to address concerns and issues related to the study. The documents of the research process and results should follow the prescribed rules. The researchers will formulate a clear and feasible action plan reflecting the points for further interventions and development. The rollout and adoption of the strategy/innovation will be carefully planned for effective implementation. The Schools Division Research Committee (SDRC) will lead in the rollout of the intervention and ask for full support from the top management. Figure 1 below shows the research process of the intervention strategy.

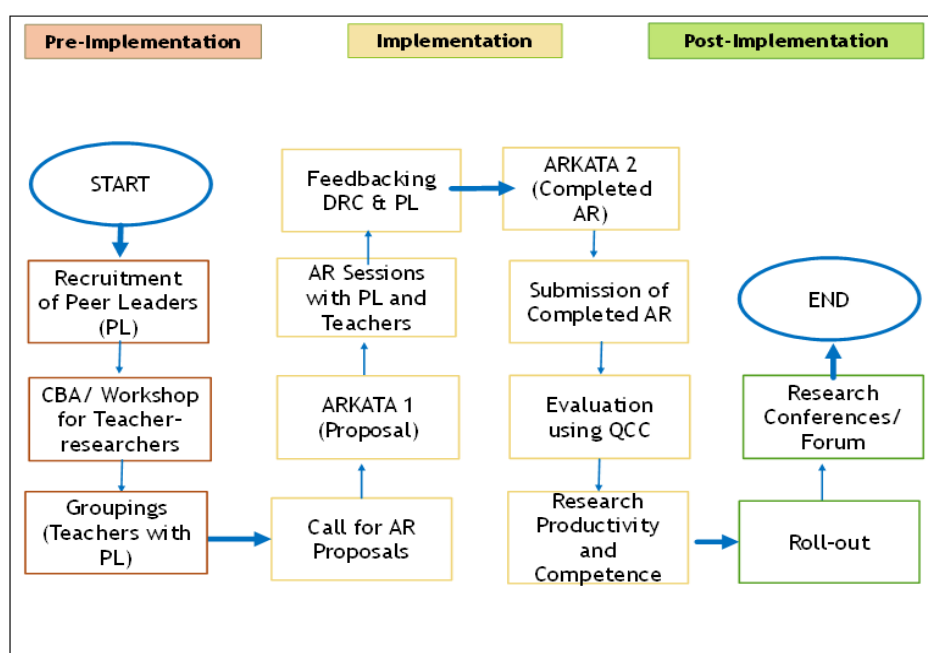


Figure 1. Research process of the intervention strategy

## Methods

### *Participants and/or other Sources of Data and Information*

The participants of the study were the selected teacher-researchers in the Schools Division of Bohol who submitted action research proposals. The researchers chose the teachers since conducting in-depth action research studies on teaching-learning innovation is one of their duties and responsibilities (DepEd Memorandum No. 4, s. 2022).

Purposive sampling was used to determine the participants of this action research study. Purposive sampling technique, also called as judgment sampling, is the deliberate choice of a participant due to the qualities the participant possesses. It is a nonrandom technique that does not need underlying theories or a set number of participants. Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience (Etikan, 2016).

The study was conducted in the selected Districts of Schools Bohol Division during the First Semester of the School Year 2022-2023. The study was completed within six-month time. It uses a self-made questionnaire which was patterned after the guidelines set in the

DepEd Order No. 17 series of 2017 "Research Management Guidelines. It underwent validity review by the research technical working team of SDO Bohol. The tool was also pretested and produced a Cronbach's alpha result of 0.967, which means that it is highly reliable.

### *Data Gathering Methods*

The researchers chose the teachers since conducting in-depth action research studies on teaching-learning innovation is one of their duties and responsibilities (DepEd Memorandum No. 4, s. 2022).

Data gathering is crucial in research, as the data is meant to contribute to a better understanding of a theoretical framework (Suen et al., 2014). In this research study, a pre-experimental research design was utilized by the researchers to determine the effectiveness of Peer-Led Team Learning (PLTL) in enhancing the research competence of the teachers. Pre-experimental designs are research schemes in which a subject or a group is observed after a treatment has been applied in order to test whether the treatment has the potential to cause change (Pre-experimental Designs, 2018). PLTL strategy was implemented after the capability building and workshop, which

was conducted to the identified Master teachers as the research participants.

Peer Leaders recruitment and training were conducted, and a group of teacher researchers was organized. Thereafter, ARKATA 1 was conducted to help teacher-researchers formulate the action research proposals and the adopted guidelines. ARKATA 2 follows to guide the teacher-researchers on the technical writing of the complete study following the prescribed format.

The group of teacher-researchers met with the Peer Leaders on a weekly basis to address real and existing issues and challenges encountered during the conduct of their action research implementation and writing.

The researchers adapted and modified the Quality Control Checklist (QCC) of DepEd for Completed Action Research to measure teachers' competence in conducting action research. The teachers' competence in action research was measured before and after the implementation of the strategy.

### **Ethical Considerations**

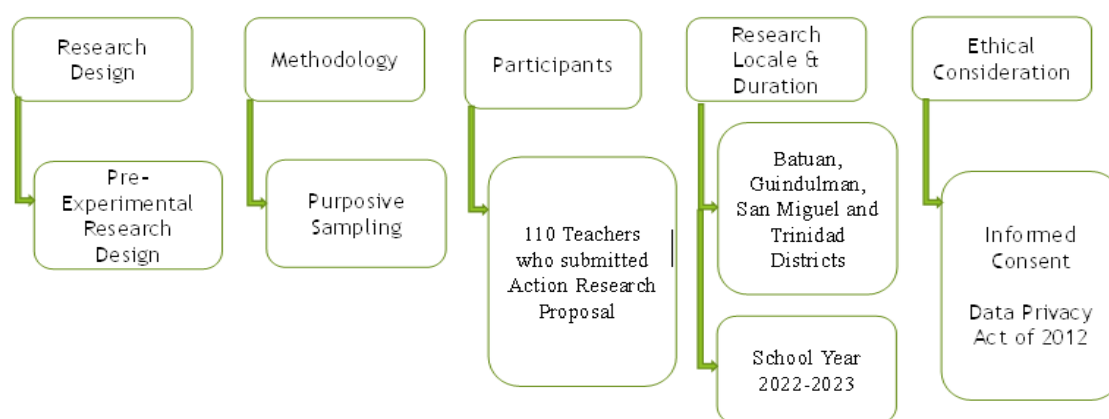
The researchers followed the ethical standards in conducting the study to ensure the participants' rights were protected. Participation was voluntary, and it was made clear to them

that the data gathered would be used solely for academic purposes. The researcher ensured confidentiality by replacing their names with codes and limiting access to data in accordance with the Data Privacy Act of 2012, which protects people's private information. The researcher took steps to make sure that any critical data or information about the participants would not be accessed, moved, or copied without the approval and consent of the Regional Research Committee.

### **Data Analysis**

Appropriate statistical analysis was utilized in the analysis of data. The statistical methods aided in the outcomes of this action research study. Descriptive statistics was used to analyze the data gathered where the researcher made tool was utilized in the study. To determine how Peer-Led Team Learning contributes to the enhancement of the competence of master teachers in action research, it was measured according to its credibility, contributory, communicable, and conforming skills. Simple statistics like frequency counting and simple percentage formula was utilized:

Below in Figure 2 is the presentation of the action research methods flow.



*Figure 2. Action research methods flow*

### **Discussion of Results and Reflection**

This part presented the results and discussion on the competence of teachers in action research in the selected school districts of the Schools Division of Bohol during the period of

June to December 2022. The presentation is aided with tables, interpretation, and analysis as follows: (1) Competence of Teachers in Action Research (2) Action Research Productivity of the Teachers.

## Results

Table 1 shows the action research productivity of the teacher-researchers which is meas-

ured according to their submission of action research proposals and completion of their action research studies.

*Table 1. Action Research Productivity*

Implementation Period	Submitted Action Research Proposal	Completed Action Research	Percentage of Increment
June to December 2022	110	108	98.18%

Surprisingly, more than 98% or 108 out of 110 teacher-researchers have completed their action research studies during the implementation of the Division Research Committee initiated Peer-Led Team Learning (PLTL) strategy conducted to the selected teacher-researchers of Batuan (33), Guindulman (20), San Miguel (29) and Trinidad (28) Districts. This illustrates that PLTL helps boost the research interest of the teachers in writing action research studies thus improve research productivity and motivation.

The findings of the study agreed to the statements of Morales et al. (2016) that teachers have positive views towards action re-

search that can help them improve their teaching performance and lifelong learning. Teachers have high regard for the value and essence of action research to become more effective teacher and grow professionally.

The research productivity lies on the teachers' positive attributes, time management, research attitudes and the appropriate manner of undertaking the action research study.

Table 2 reflects the research competence of the teachers based on parameters such as (1) context and rationale, (2) proposed innovation, intervention, strategy, (3) research questions, (4) research methods, (5) results and discussion, and (6) work plan.

*Table 2. Teachers' Level of Competence in Action Research*

Parameter	High		Moderate		Low		Weighted Mean	Level of Competence
	F	%	F	%	F	%		
Context and Rationale	67	60.91	41	37.27	2	1.82	2.58	High
Proposed Innovation, Intervention, Strategy	74	67.27	36	32.73	0	0.00	2.67	High
Action Research Questions	62	56.36	47	42.73	1	0.91	2.55	High
Action Research Methods	66	60.00	44	40.00	0	0.00	2.60	High
Results and Discussion	60	54.55	49	44.54	1	0.91	2.54	High
Work Plan	71	64.55	38	34.54	1	0.91	2.64	High
Completed Action Research Output	61	55.45	49	44.54	0	0.00	2.55	High

The research competence of the teachers reveals generally, a high level of competence (55.45%). In particular, research competence about context and rationale (60.91%), proposed innovation, intervention, strategy (67.27%), action research questions (56.36%), action research methods (60.00%), results and discussion (54.55%), and work plan (64.55%) are all in a high level of competence. The result implies that Peer-Led Team Learning greatly

help enhance the research competence of the teachers.

However, significant number of teachers based on the overall research competence, 49 or 44.54% of the teacher-researchers, based on the assessment of their completed action research output, were in moderate level of competence and 2 out of 110 or almost 2% of the teacher-researchers were in low level of competence in writing context and rationale. This



infers that teachers still have difficulties in conducting action research.

The findings presented is conformant to the result of the study conducted by Bueno (2017) that teachers still need to improve their knowledge and skills in research and if not addressed, research outputs would be leading to a malpractice. Likewise, Morales et al. (2016) reported that teachers perceived a moderate level of competence on certain aspects of action research. Significant number of teachers still have difficulties in conducting action research (Tandowen et al., 2019).

Despite the challenges of teachers such as but not limited to lack of research-related training and financial support for research, majority of the teacher-participants have improved their knowledge, skills and competence in action research through Peer-Led Team Learning Strategy.

### **Reflections**

Action research output is considered a complete detailed document measuring the knowledge, skills, and competence of teachers in writing and conducting action research. Engagement in action research studies enables teachers to express their knowledge of the concepts, tools, and methods used in improving the quality and effectiveness of the teaching and learning process. One main element of productive learning that the researchers have gained in this research endeavor is engagement and cooperation among members and peer-leaders of every small group of researchers. Likewise, the learnings gained from the sessions during the Action Research Kumustahan, Assessment, and Technical Assistance (AR-KATA) program boosts the researchers' and teachers' interest which allows greater learning, self-confidence, and self-expression.

Additionally, it allows teachers to view action research from a wide variety of perspectives instead of looking at it as a burden and tedious task the way some of the teachers think of it to be.

At first, the researchers thought that it was a relatively challenging and time-consuming endeavor, but when the researchers implemented the Peer-Led Team Learning (PLTL)

strategy, the researchers were surprised by the overwhelming participation and positive interest from the teachers thus, reinforced action research knowledge, skills and competence that deliver benefit to the department and the learners as well. Researchers also learned that if peer leaders were accessible and available in every district and school, the action research activities would be more productive and would satisfy the need of the teachers, thus achieving the research purpose.

Moreover, it is also pivotal to note that the best indicator and the most concrete manifestation that the teachers are capable and competent in writing and conducting action research is the research output itself. Completed action research output is a positive determinant of the teachers' knowledge and skills in action research, and the PLTL is an effective strategy to enhance the teachers' competence in action research.

It was also with great fulfillment on the part of the researchers to learn new perspectives and understand their craft. Their difficulties in conducting such endeavors with limited resources and competence, not to mention limited technical assistance or none at all given to them before, reinforces their motivation. During the course of the study, the researchers observed that their competence in giving technical assistance on action research was improved and leveled up.

### **Recommendations**

Based on the findings of the study, the researchers highly recommended the following: (1) action research competency-enhancement training through the AR-KATA program or other enhancement initiatives be conducted in schools; (2) Conduct of District-organized and school-based research activities utilizing PLTL strategy be implemented and sustained; (3) Seminars, training, development of research work-related experience and accomplishments of the teachers be included as one of the criteria in selecting and hiring of teachers, and (4) utilization and replication of the PLTL process shall be recommended to schools for other school programs and projects implementation.



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