



TEACHERS' RESEARCH COMPETENCIES AS CORRELATES OF RESEARCH PRODUCTIVITY AND UTILIZATION: BASES FOR A VIRTUAL CAPACITY BUILDING PROGRAM

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Abstract

This study examined teachers' research competencies in doing action research, specifically their knowledge, skills, and attitudes among teachers who are doing action research or have completed action research in the Division of Quezon City during the school year 2024–2025, as correlates of their research productivity and utilization, serving as the foundational bases for a proposed virtual capacity-building program.

Specifically, it sought answers to the following questions:

1. What is the level of teachers' competencies in doing research as perceived by the teachers themselves, school research committee members, and school head respondents in terms of the following variables?
 - a. Knowledge
 - b. Skills
 - c. Attitude
2. Are there significant differences in the perceptions of the three groups of respondents on the level of teachers' competencies in doing action research on the aforementioned aspects?
3. What is the status of the research productivity of the teachers in terms of the following aspects?
 - a. Number of action research/es conducted
 - b. Number of action research/es implemented
 - c. Time frame in doing action research/es
 - d. Accuracy of report submitted
 - e. Relevance to the research agenda
4. What is the extent of utilization of the developed action researches as perceived by the teachers, school research committee members, and school head respondents in terms of the following aspects?
 - a. Professional development
 - b. Delivery of instruction
 - c. Learning outcomes
 - d. Citations
5. Are there significant differences in the perceptions of the three groups of respondents on the extent of utilization of researchers' developed action research/es on the aforesaid aspects?

6. Is there a significant relationship between the teacher respondents' level of competencies in doing action research and the following variables?
 - a. Status of action research productivity
 - b. Extent of action research utilization
7. Based on the results of the study, what virtual capacity-building program may be proposed?

This study employed a descriptive-correlational research method. The data-gathering instrument was the survey questionnaire administered via Google Drive, and the link was sent through Messenger. It involved a total of 130 respondents, composed of 50 elementary and secondary teachers, 68 school research committee members, and 12 school heads. The survey tool was validated by eight experts, and the responses provided insights into participants' knowledge, skills, and attitudes in relation to research productivity and utilization, as well as the challenges they encountered.

The study generated the following findings:

1. The level of teachers' competencies in doing action research was high in terms of knowledge and skills; however, it was moderate in terms of attitude as perceived by the teachers and school research committee members. On the other hand, the school heads perceived it as high.
2. There was a significant difference in the perceptions of the three groups of respondents on the level of teachers' competencies in doing action research in terms of knowledge, skills, and attitude.
3. With regard to teacher respondents' research productivity, the largest number of respondents had initiated and implemented action research, took one year to conduct action research, had submitted action research reports, and had conducted relevant research.
4. The developed action research/es of some of the teacher respondents were utilized to a high degree in the areas of professional practice, delivery of instruction, learning outcomes, and citations.
5. There was no significant difference among the perceptions of the three groups of respondents on the extent of utilization of teacher respondents' developed action research.
6. There was a significant relationship between the teacher respondents' level of competencies in doing action research in terms of knowledge, skills, attitude, and the status of action research productivity. On the other hand, there was no significant relationship between the teacher respondents' level of competencies in doing action research in terms of knowledge, skills, and attitude and the extent of action research utilization.
7. Based on the results of the study, a virtual capacity-building program was deemed necessary; hence, it was proposed in this study.

Keywords:

Action research competencies, research productivity, research utilization, teachers, virtual capacity building program.

This study investigated the action research competencies of teachers and examined how these skills influenced their research productivity. Recognizing the pivotal role of action research in cultivating a research-active culture, the research aimed to identify existing skill

gaps and inform targeted virtual capacity-building initiatives. Prior studies suggested that strong research competencies among teacher could significantly enhance their contributions to educational improvement. However, there was limited empirical data on the specific skills possessed by teachers and how these skills translated into research outputs. Addressing this gap, the current study analyzed their self-perceived research skills, actual research productivity, and the relationships between these variables to inform effective professional development strategies.

According to Smith et al. (2020), teachers' capacity to conduct research must be supported to ensure a conducive climate for learning. In this context, there is a call to develop teachers' research abilities to support continued school improvement and innovative pedagogies. Lee and Garcia (2020) support this idea, stating that many teachers encounter problems that hinder the successful implementation of action research, such as a lack of expertise in conducting research, limited institutional support, and insufficient time to execute it. Building on this idea, Johnson (2020) states that establishing a research-oriented teaching community is an essential requirement for lasting educational development. Through this community, teachers can analyze practices, adapt to students' emerging needs, and apply research-based strategies to enhance students' learning.

Here, teachers' roles extend far beyond delivering instruction to include participating in relevant action research and development projects intended to boost student achievement. Action research plays a prominent role among these projects, enabling teachers to view the subject matter from different perspectives and promoting reflective, self-critical teachers by helping them analyze current practices. The effectiveness of action research depends to a great extent on teachers' knowledge of the competencies necessary to utilize their attitudes, knowledge, and skills for the successful conduct of action research.

This study investigated relation between teachers' competencies to conduct action research and the knowledge and skills that could promote teachers' professional development through applying research to enhance the teaching and quality of management of resources that comprise the forming of relevant research questions, data collection and analysis, decision making supported by evidence and communicating results to others and the knowledge and skills for action research may affect teaching quality and effective utilization of resources significantly.

Lack of competencies together with obstacles such as limited time and resources, as well as lack of support from relevant administrators, make teachers fail to utilize action research effectively and attain individual professional growth and improvements in teaching, which in turn, might influence student outcomes and the whole school development negatively. Therefore, investigation of teachers' research capacities, including teachers' knowledge, skills, and attitudes toward action research, is essential to ascertain specific points where teachers need support and guidance and reveal common problems of teachers working in action research.

Based on the experience, the researcher was designated as the school research chairman by the school principal, aiming to create a more encouraging and supportive climate and guide the teachers, yet this did not seem sufficient to address the needs. That is why this study was conceptualized as a partial solution to address this daunting endeavor for teachers engaged in action research. The study was justified on the basis that there is a need to know the current

status of teachers' research competence. To specifically assess the gap, challenges, and problems that they encounter when doing research activities

From the result, it can inform an appropriate design for a specific intervention in the form of a virtual training course tailored to the specific needs of teacher-researchers so that their research skills can be improved, attitudes toward action research can become positive, and the identified hurdles in conducting action research can be addressed. With these, we can help teachers develop research competence and become better researchers. Considering the benefits of action research gained from this study, the researcher, who had over twenty years of experience teaching, as well as the school researcher committee chairman, sought to look into the levels of teachers' research competence and determine its relation to the teachers' productivity and use of research.

This study explored the relationships among teachers' research skills, their scholarly output, and the application of research findings, with the goal of informing targeted interventions. By addressing the barriers teachers face, especially through virtual capacity-building, this research significantly empowered educators as active contributors to educational research and innovation.

METHODS

Research Design

This study utilized quantitative descriptive methods to determine and evaluate the teacher's knowledge, skills and attitude in conducting action research. It also used descriptive correlational design, a quantitative non-experimental method where the researcher used correlational statistics to quantify and characterize the strength of the relationship between variables or scores (Creswell, 2022). Thus, this established whether there was a connection between the knowledge, skills, and attitude of the responders. In relation to their utilization and productivity in conducting action research. After data collection, interpretation followed to justify the variable concepts. Data interpretation identified relationships that informed the development of a virtual capacity-building program.

Participants

The study involved 130 participants comprised of 12 School Heads, 50 teachers and 68 members of School Research Committee from the Division of Quezon City, focusing on the link between profile characteristics and research output. Additionally, the researcher's affiliation with a public schools within Quezon City facilitated access to the research site, ensuring familiarity with the local context and enhancing the practical relevance of the findings.

Data Collection

The data collection process was initiated after securing approval from the thesis adviser and the Graduate School, ensuring the research design was refined and aligned with academic standards. Following validation and finalization of the survey instrument through expert feedback and pilot testing, formal permission was obtained from the Schools Division Superintendent of Quezon City. Official letters were then issued to inform respondents across Districts 1 to 6 about the study and invite their voluntary participation. The survey was administered electronically via Google Forms, with the researcher providing a clear explanation

of its purpose, instructions, and ethical considerations to ensure informed and accurate responses. The responses were automatically collected, collated, and prepared for analysis, facilitating an efficient and reliable data gathering process.

Research Instrument

This study utilized survey questionnaires as the main tool in gathering data. Both structured and semi-structured interviews were also held in support and for verifications of their responses in the survey questionnaire. A researcher-made questionnaire was used with three components with corresponding a five point Likert scale. The first component measured respondents' knowledge. The second component assessed the competencies. The third component evaluated respondents' attitudes toward conducting action research.

A 5-point scale: 5 indicating Very High, 4 as High, 3 as Moderate, 2 as Low, and 1 as Very Low was used to indicate the quality or degree of appreciation of respondents on each item. Originally, the survey questionnaire contained a Demographic Profile as the part I but removed and included only seven questions. The revised questionnaire proceeded directly to Part 2, which focused on the researcher- respondents, competencies in knowledge, followed by skills and attitudes. Redundant statements were removed. To comply with the Standard Operating Procedure state specifically; Part 3 of the survey was revised. Instead of focusing on respondents' preferences for conducting action research, it was changed to attitudes, as reflected in the Action Research Guidelines outlined in DO 39, s. 2016 (Basic Education Research Agenda).

A statistician advised that the instrument should align with the SOP under examination and recommended that correlation be established, as SOPs 3 and 4 required a correlation-based analysis. An English Public Schools District Supervisor also provided inputs on refining the research tool. Throughout the study, the researcher maintained constant communication with her adviser and experts, ensuring that their insights were incorporated. The first part of the survey questionnaire aimed at collecting teachers' responses regarding their knowledge, skills, and attitudes in conducting action research. Knowledge-related competencies were evaluated based on several factors, including writing the introduction, formulating the statement of the problem (SOP), applying research methodology, understanding research ethics, utilizing appropriate data collection tools, and integrating technology in conducting action research.

Meanwhile, the competencies related to skills included identifying and formulating a research topic, collecting data, analyzing the data, presenting conclusions, recommendations, and reporting findings. The competencies related to attitudes examined respondents' perceptions of action research, including Attitudes on the usefulness of action research, positive perceptions, and Attitudes concerning technological aspects. To make sure the reliability of the instruments in this study, pilot testing was conducted to test the accuracy, clarity, and relevance of the research instrument. The researcher held the pilot testing some schools in Quezon City which were not included as respondents of the study

Additionally, the pilot testing helped refine the data collection process, especially in a virtual setting, by uncovering potential technical or logistical challenges and estimating the time required for completion. This preliminary phase provided valuable initial data that informed adjustments to the study design and strengthened the validity of the subsequent findings. Ultimately, it enhanced confidence in the research approach and ensured that the final tool

would reliably gather meaningful data to support the development of an effective virtual capacity-building program because of the study.

Data Analysis

The data were analyzed using appropriate statistical methods to address the study's objectives. Weighted Mean was utilized to find the average scores in the evaluations done by the researcher-respondents, school heads, and school research committee members. A five-point scale was provided to indicate the quality or degree of appreciation of respondents on each item. In the analysis of the items, 5 is the highest and 1 is the lowest. The scale, range, and verbal interpretation of the computed means were used.

Analysis of Variance (ANOVA) was used to determine whether significant differences exist among the perceptions of the three groups of respondents concerning teachers' competencies in conducting action research and the extent to which researcher-developed action research is utilized.

Sidak Analysis of Pairwise Comparison was also employed to determine which group significantly differed after obtaining a significant result in the ANOVA.

Chi-Square Test was used to test if there is a significant relationship between the teacher respondents' level of competencies in doing Action Research and the status of Action Research productivity. Contingency Coefficient (C). This method was applied to determine whether two variables or data sets were independent or dependent on each other. It is also known as Pearson's correlation coefficient

Pearson r Coefficient was applied to measure the strength and direction of a linear relationship between the teacher-respondents' level of competencies in conducting action research and the extent of its utilization. The range and strength of the relationship for the interpretation of the computed Pearson correlation coefficient

Lastly, Correlated t-test was used to determine whether a significant relationship exists between the teachers' level of competencies in conducting action research and the extent of action research utilization.

RESULTS

Respondents' Perceptions on the Level of Teachers' Competencies in Doing Action Research in Terms of Knowledge

Table 2 to Table 7 present the respondents' perceptions on the level of teachers' competencies in doing Action Research in terms of knowledge across all dimensions provided.

Table 8 provided the summary of the 5 indicators under the Level of Teachers' Competencies in Doing Action Research in Terms of Knowledge.

Table 8

Summary of Respondents' Perceptions on the Level of Teachers' Competencies in Doing Action Research in Terms of Knowledge

Indicators	Respondents					
	Teachers		School Research Committee Members		School Heads	
	OWM	VI	OWM	VI	OWM	VI
a. Statement of the Problem	3.62	H	4.09	H	4.27	H
b. Writing Introduction	3.58	H	4.04	H	4.27	H
c. Research Methodology Conceptualization	3.55	H	4.02	H	4.03	H
d. Ethics Knowledge in doing Action research	3.73	H	4.17	H	4.48	H
e. Appropriateness use of Data Collection Tools	3.65	H	4.11	H	4.33	H
f. Application of Technology	3.58	H	4.02	H	4.03	H
Grand Weighted Mean	3.62	H	4.08	H	4.24	H

Implications:

This implied that competence is highly perceived in the mentioned variables and needs to be further enhance in research methodology conceptualization. The school heads provided the highest ratings on teacher's competence (GWM = 4.27) which signifies highly competent. Highest rated areas on their judgment on teacher's competencies are the ethics knowledge (WM = 4.48), Statement of the Problem Conceptualization (WM = 4.27) and appropriateness of data collection tools (WM=4.33) while lowest rated area on their perception was also research methodology (WM=4.02) and technology application. This implies a highly positive view from the school heads on teachers' skills, especially in ethical considerations and on problem conceptualization of the action research. Research methodology applications and use of technology were perceived as area for further enhancement among teachers.

Respondents' Perceptions on the Level of Teachers' Competencies in Doing Action Research in Terms of Skills

Table 9 to Table 13 present the respondents' perceptions on the level of teachers' competencies in doing Action Research in terms of skills across all dimensions provided.

Table 14 provided the summary of the 5 indicators under the Level of Teachers' Competencies in Doing Action Research in Terms of Skills.

Table 14
Summary of the Level of Teachers' Competencies in Doing
Action Research in Terms of Skills

Indicators	Respondents					
	Teachers		School Research Committee Members		School Heads	
	OWM	VI	OWM	VI	OWM	VI
a. Developing Research Topic	3.70	H	4.09	H	4.32	H
b. Collecting Data	3.62	H	4.06	H	4.05	H
c. Analyzing Data	3.20	M	3.82	H	3.82	H
d. Delivering Conclusions and Recommendations	3.62	H	4.17	H	4.25	H
e. Reporting	3.56	H	4.08	H	3.93	H
Grand Weighted Mean	3.54	H	4.04	H	4.07	H

The School Research Committee Members provided slightly higher ratings overall with OWM=4.04 also interpreted as High. "Delivering Conclusions and Recommendations" was rated as the strongest research skill (OWM=4.17), while "Developing Research Topic" was ranked second highest (OWM=4.09). This response group echoed the teachers' self-evaluation with "Analyzing Data" also being the lowest-ranked research skill (OWM=3.82) within the high-ranked categories. This meant that teachers were rated higher on interpreting and providing results rather than statistical analysis.

Respondents' Perceptions on the Level of Teachers' Competencies in Doing Action Research in Terms of Skills

Table 15-19 presents the level of competencies in doing action research in terms of attitude, in terms of the usefulness of action research, positive perception, and technical aspects across all dimensions provided.

Table 19 provided the summary of the 4 indicators under the Level of Teachers' Competencies in Doing Action Research in Terms of Attitude.

Table 19
Summary of Respondents' Level of Teachers' Competencies in Doing
Action Research in Terms of Attitude

Indicators	Respondents					
	Teachers		School Research Committee Members		School Heads	
	OWM	VI	OWM	VI	OWM	VI
a. Attitude on the usefulness of Action research	4.05	H	4.54	VH	4.57	VH
b. Attitude of Researcher in terms of Challenging Perception	2.38	L	2.42	L	3.00	M
c. Attitude of Researcher in terms of Positive Perception	3.58	H	4.09	H	4.20	H
d. Attitude on Research as to Technical Aspect	3.52	H	4.06	H	4.23	H
Grand Weighted Mean	3.38	M	3.78	M	4.00	H

Overall attitude toward action research for all the groups were computed as to summarize the findings in terms of useful, negative perception, positive perception, and technical competencies to derive to the Grand Weighted Mean. (Refer to Table 19) Grand Weighted Mean of Teacher was 3.38 interpreted as "Moderate". The findings showed that teachers viewed the action research generally positive and not so positive, which could imply that while teachers believed that action research is useful for them; there are also some apprehensions that they are facing with regards to conducting action research.

Significant Difference in the Perceptions of the Three Groups of Respondents on the Level of Teachers' Competencies in Doing Action Research as to Knowledge

Table 20 shows the test of difference in the perceptions of the three groups of respondents on the level of respondents' competencies in doing action research as to knowledge.

Table 20**Test of Significant Difference in the Perceptions of the Three Groups of Respondents on the Level of Teachers Competencies in Doing Action Research as to Knowledge**

Indicators	Source	df	SS	MS	Computed F Value	Critical F Value	Decision	Inter-pretation
A. Statement of the Problem Conceptualization	Factor	2	7.873	3.937	6.70	3.07	Reject the H ₀	Significant
	Error	127	74.596	0.587				
B. Writing Introduction	Factor	2	8.058	4.029	6.14	3.07	Reject the H ₀	Significant
	Error	127	83.371	0.656				
C. Research Methodology Conceptualization	Factor	2	6.742	3.371	4.96	3.07	Reject the H ₀	Significant
	Error	127	86.330	0.680				
D. Ethics Knowledge in doing Action research	Factor	2	8.314	4.157	5.86	3.07	Reject the H ₀	Significant
	Error	127	90.066	0.709				
E. Appropriateness use of Data Collection Tools	Factor	2	7.917	3.958	5.33	3.07	Reject the H ₀	Significant
	Error	127	94.286	0.742				
F. Application of Technology	Factor	2	6.136	3.068	4.27	3.07	Reject the H ₀	Significant
	Error	127	91.249	0.718				

Legend: Significant if P-value $\leq \alpha = 0.05$

As revealed in table 20, the computed F values (6.70, 6.14, 4.96, 5.86, 5.33, 4.27) are higher than the critical F value of 3.07. Therefore, the statistical decision entails the rejection of the null hypothesis at a significant level of 5%. This supports the fact that there are significant differences among the perceptions of the three groups of respondents on the level of teachers' competencies in doing action research pertaining to knowledge focusing on their knowledge of various aspects.

The respondents' perceptions regarding the knowledge of these areas were significantly different across the three groups (teachers, School Research Committee Members, and School Heads). For example, the "Statement of the Problem Conceptualization" factor had a computed F-value of 6.70, surpassing the critical value, which led to the rejection of the null hypothesis and indicated that the groups hold significantly different views on this aspect of action research. This trend was consistent for all other factors, with each exhibiting a significant difference. These findings suggest that there is a need for training and support programs to help improve their skills, especially in the areas of research methods and ethics.

Table 22 displays the test of difference of respondents' perceptions on the level of teachers' competencies in doing action research as to skills.

Table 22

Test of Significant Difference of Respondents' Level of Teachers'

Competencies in Doing Action Research as Perceived by the Three Groups of Respondents as to Skills

Indicators	Source	df	SS	MS	Computed F Value	Critical F Value	Decision	Inter-pretation
A. Developing Research Topic	Factor	2	6.076	3.038	4.52	3.07	Reject the H_0	Significant
	Error	127	85.371	0.672				
B. Collecting Data	Factor	2	5.930	2.965	4.00	3.07	Reject the H_0	Significant
	Error	127	94.145	0.741				
C. Analyzing Data	Factor	2	11.771	5.886	6.56	3.07	Reject the H_0	Significant
	Error	127	113.958	0.897				
D. Delivering Conclusions and Recommendations	Factor	2	9.857	4.928	6.03	3.07	Reject the H_0	Significant
	Error	127	103.806	0.817				
E. Reporting	Factor	2	7.627	3.813	4.43	3.07	Reject the H_0	Significant
	Error	127	109.444	0.862				

Table 22 reports the results of the analysis of variance on respondents' competencies of conducting action research at each level: the competencies in developing a research topic, collecting data, analyzing data, preparing a conclusion and recommendation, and reporting. The three groups of respondents; namely, teachers, school research committee members, and school heads perceive the research competencies on these levels differently with an $F = 4.52$ on topic development, $F = 4.00$ on data collection, $F = 6.56$ on data analysis, $F = 6.03$ on the presentation of conclusions and recommendations, and $F = 4.43$ on the report of the Action Research project. All Computed F values are higher than 3.07, which is the critical value at 0.05 alpha level and is statistically significant. Null hypothesis for all the variables was rejected, which means that there is significant difference between the three groups regarding their perception on each research competency. High differences are seen in data analysis ($F=6.56$) and at presentation of conclusions and recommendations ($F=6.03$), showing where the gap is most felt among them.

Table 23**Sidak Analysis of Pairwise Comparison on the Level of Teachers'****Competencies in Doing Action Research as Perceived by the Three Groups of Respondents in Terms of Skills**

Indicators	Comparison	Difference of Mean	Std. Error of Difference	p-value	Results
A. Developing Research Topic	Teachers	0.39	0.15	0.034	Means are different
	School Research Committee Members				
	Teachers	0.62	0.26	0.061	Means are not different
	Principal				
	School Research Committee Members	0.23	0.26	0.763	Means are not different
	Principal				
B. Collecting Data	Teachers	0.44	0.16	0.021	Means are different
	School Research Committee Members				
	Teachers	0.43	0.28	0.317	Means are not different
	Principal				
	School Research Committee Members	0.01	0.27	1.000	Means are not different
	Principal				
C. Analyzing Data	Teachers	0.62	0.18	0.002	Means are different
	School Research Committee Members				
	Teachers	0.61	0.30	0.133	Means are not different
	Principal				
	School Research Committee Members	0.01	0.30	1.000	Means are not different
	Principal				
D. Delivering Conclusions and Recommendations	Teachers	0.55	0.17	0.004	Means are different
	School Research Committee Members				
	Teachers	0.63	0.29	0.090	Means are not

	Principal				different
	School Research Committee Members	0.08	0.28	0.988	Means are not different
	Principal				
E. Reporting	Teachers	0.51	0.17	0.011	Means are different
	School Research Committee Members				
	Teachers	0.37	0.30	0.522	Means are not different
	Principal				
	School Research Committee Members	0.14	0.29	0.947	Means are not different
	Principal				

Legend: Significant if P-value $\leq \alpha = 0.05$

The Sidak analysis in Table 23 reveals significant differences in respondents' perceptions of teachers' skills in conducting action research across specific competencies. Teachers rated themselves significantly lower than school research committee members in developing a research topic (mean difference = 0.39, $p = 0.034$), collecting data (mean difference = 0.44, $p = 0.021$), analyzing data (mean difference = 0.62, $p = 0.002$), delivering conclusions and recommendations (mean difference = 0.55, $p = 0.004$), and reporting findings (mean difference = 0.51, $p = 0.011$). These differences highlight areas where teachers feel less confident in their skills compared to the assessments made by research committee members.

However, no significant differences were found between teachers and principals across all skill indicators, with p-values ranging from 0.061 to 0.522, suggesting that teachers' self-assessments are more closely aligned with how principals view their skills.

Moreover, school research committee members and principals also showed no significant differences in any of the competencies, as evidenced by high p-values (e.g., $p = 0.763$, 1.000, 0.988). Overall, the data suggests that teachers tend to underrate their skills in conducting action research, particularly when compared to the perceptions of research committee members, while principals and committee members hold more favorable and consistent views of teachers' skill levels. This gap in self-perception versus external perception indicates a potential area for targeted professional development and self-efficacy building among teachers.

This indicates that teacher respondents received the lowest ratings, while school research committee members received the highest, in the areas of Developing Research Topic, Collecting Data, Analyzing Data, Delivering Conclusions and Recommendations, and Reporting.

Table 24**Test of Significant Difference in the Perception of the Three Groups of Respondents on the Level of Teachers' Competencies in Doing Action Research as to Attitude**

Indicators	Source	df	SS	MS	Computed F Value	Critical F Value	Decision	Interpretation
A. Attitude on the Usefulness of Action research	Factor	2	7.560	3.780	6.13	3.07	Reject the H0	Significant
	Error	127	78.359	0.617				
B. Attitude of Researcher in terms of Positive Perception	Factor	2	8.608	4.304	5.85	3.07	Reject the H0	Significant
	Error	127	93.411	0.736				
C. Attitude on Research as to the Technical Aspect	Factor	2	10.273	5.136	6.51	3.07	Reject the H0	Significant
	Error	127	100.159	0.789				

Legend: Significant if P-value $\leq \alpha = 0.05$

The results confirm that there are significant differences among the perceptions of the three groups on teacher competencies in Action Research. The significant variations may be addressed with concrete initiatives that can improve a teacher's competency through a common and clearer perception. The outcomes imply the importance of improving training, mentoring and continuing professional development among teachers to strengthen their competencies and establish uniform perspectives across groups. By providing adequate support system, the common vision of the research will emerge.

Table 25**Sidak Analysis of Pairwise Comparison on the Level of Teachers'****Competencies in Doing Action Research as Perceived by the Three Groups of Respondents in Terms of Attitude**

Indicators	Comparison	Difference of Mean	Std. Error of Difference	Pvalue	Results
A. Attitude on the Usefulness of Action Research	Teachers	0.49	0.15	0.003	Means are different*
	School Research Committee Members				
	Teachers	0.51	0.25	0.125	Means are not different
	Principal				
	School Research Committee Members	0.02	0.25	1.000	Means are not different
	Principal				
B. Attitude of Researcher terms of Positive Perception	Teachers	0.51	0.16	0.006	Means are different*
	School Research Committee Members				
	Teachers	0.62	0.28	0.077	Means are not different
	Principal				
	School Research Committee Members	0.11	0.27	0.967	Means are not different
	Principal				
C. Attitude on Research as to Technical Aspect	Teachers	0.54	0.17	0.004	Means are different*
	School Research Committee Members				
	Teachers	0.72	0.29	0.039	Means are different*
	Principal				
	School Research Committee Members	0.17	0.28	0.897	Means are not different*
	Principal				

Legend: Significant if P-value $\leq \alpha = 0.05$

These results indicated that while the teacher's attitude toward AR is positive, teachers seem to lack confidence with their knowledge and skills to practice Action Research and it shows the need for strengthening the support mechanisms for teachers in

research (mentoring, recognition and further training and professional development) to develop teachers' positive attitudes towards research practices.

Tables 26-30 show responses on the level of Action Research productivity and utilization concerning Action Research conducted, Action Research implemented, time frame in doing action research, accuracy of the report submitted, and relevance to the research agenda.

Table 31 to 34 indicated the respondents' perceptions on the Extent of Utilization of the Teacher Respondents' Developed Action Research and reflected in Table 35 the summary of the data. Table 35 summarizes the extent of utilization of the teacher respondents' developed action research as Perceived by the Three Groups of Respondents.

Table 35

Summary of Respondents Perceptions on the Extent of Utilization of the Teacher Respondents' Developed Action Research

Indicators	Respondents					
	Teachers		School Research Committee Members		School Heads	
	OWM	VI	OWM	VI	OWM	VI
A. Professional practice	4.00	H	3.88	H	3.67	H
B. Delivery of instruction	3.96	H	3.81	H	3.80	H
C. Learning outcomes	3.93	H	3.86	H	3.83	H
D. Citations	4.06	H	3.98	H	3.97	H
Grand Weighted Mean	3.99	H	3.88	H	3.82	H

Table 35 shows the degree of implementation of teacher-developed Action Research in the different domains based on the perceptions of the three groups of respondents: teachers, members of the school research committee and school heads. The OWM for teachers' responses is 3.99; for school research committee members, OWM is 3.88; for school heads, OWM is 3.82.

Tables 36 to 39 tackled on the Test of Significant Difference among the Perceptions of the Three Groups of Respondents on the Extent of Utilization of the Teacher Respondents' Developed Action Research in Terms of Professional Development, in Terms of Delivery Instruction, Learning Outcomes, Learning Citations and table 40 on the Significant Difference in the Perceptions of the Three Group of Respondents on the Extent of Utilization of the Teachers Respondents' Developed Action Research.

Tables 41 to 43 measured the Test of Relationship Between the Level of Competencies in Doing Action Research in Terms of Knowledge, Skills and Attitude and the Status of Action Research Productivity as Perceived by the Three Groups of Respondents

Tables 44 to 46 Test of Relationship between the Teacher Respondents' Level of Competencies in Doing Action Research in Terms of Knowledge, Skills and Attitude and the Extent of Action Research Utilization

Significant Relationship between the Status of Research Productivity and the Extent of Utilization

Tables 47-51 present the test of Relationship between the Status of Productivity and the Extent of Utilization.

Based from the results of the above study a generated Virtual Capacity Training was proposed.

DISCUSSIONS

The study found that teachers' competencies in conducting action research were rated high in knowledge and skills but moderate in attitude by teachers and school research committee members. School heads, however, rated teachers' attitude as high. The three respondent groups differed significantly in their perceptions of teachers' knowledge, skills, and attitudes.

Regarding research productivity, most teacher respondents had initiated and completed action research, spent one year conducting it, and submitted an action research report and related research outputs. Some teachers' action research was used to a high degree in professional practice, instructional delivery, learning outcomes, and citations. However, the three groups did not differ significantly in their perceptions of how extensively the research was used.

Teachers' knowledge, skills, and attitudes were significantly related to their action research productivity, but not to the extent to which their research was utilized. Based on these findings, the study proposed a virtual capacity-building program.

CONCLUSIONS

Based on the findings of the study the following conclusions are presented:

1. The teacher respondents possess the knowledge, skills, and attitude that adequately prepare them to do action research.
2. The three groups of respondents perceived differently the teacher respondents' competencies in doing action research, hence, necessities proper and close coordination and collaboration among them.
3. The status of teacher respondents' research productivity was low in terms of action research conducted and the time it took them to finish however, the status was good in terms of submission of accurate report, and relevant research. The action research/es developed in the respondents' schools were used in the practice of teaching profession, lesson delivery, learning outcomes and citations.

4. The three groups of respondents shared similar views on the extent of utilization of the action research developed by the teachers.
5. The high level of competencies matters much to realize high production of action research by the teachers.
6. A virtual capacity building program that will empower the teachers with necessary knowledge, skills, and positive attitudes are much needed to motivate the teachers to continuously do action research.

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