Building Bridges to Excellence: Enhancing Research Competencies Among Lucsuhin National High School Teachers Through Project SERYE

Jeffrey R. Abad[1*], Simeona Rechie C. Ojales[2]

[1]*Teacher III, Department of Mathematics, Lucsuhin National High School, Batangas, Philippines*
[2]*Principal IV, Lucsuhin National High School, Batangas, Philippines*

Abstract: **This study aimed to enhance the research competencies of junior high school teachers at Lucsuhin National High School through Project SERYE (Systematic Engagement in Research Yielding Educational Excellence). A mixed-method research approach was employed, combining descriptive and phenomenological designs, with data collected through documentary analysis, a researcher-made survey questionnaire, and interviews. The study involved 81 junior high school teachers, selected through random sampling. The sample size was determined using the Raosoft Sample Size Calculator, with a five percent margin of error. Statistical tools used in the analysis included frequency distribution, weighted mean, composite mean, and a dependent t-test. Additionally, thematic analysis was applied to the qualitative data. The results revealed a significant increase in teacher participation in the Division Conference of Basic Education Researchers, with participation rising from 7.29% in SY 2023-2024 to 32.29% in SY 2024-2025. Moreover, there was a marked improvement in teachers' research competencies across various stages of the research process, from formulating research backgrounds to drawing conclusions and recommendations, highlighting the effectiveness of Project SERYE in enhancing their research competencies. Statistically significant improvements across all stages led to the rejection of the null hypothesis. Teachers' responses further indicated that Project SERYE not only transformed their attitudes toward research but also enhanced their competencies and confidence in conducting and applying research, thereby fostering their professional growth and deepening their understanding of research processes.**

Keywords: **effectiveness, participation, Project SERYE, research competencies.**

1. Introduction

A. Context and Rationale

Continuous professional development and the improvement of teaching techniques are critical in education for cultivating an environment of quality and innovation. Central to this transformational process of altering students' learning experiences is the need to provide teachers with the research abilities required to achieve real change and improvement within educational environments. to drive holistic improvement and promote teacher empowerment within the educational community. This effort is founded on the notion that improving teachers' abilities would pave the way for a more research-informed and evidence-based approach to teaching and learning.

Moreover Article XIV, Section 2 Paragraph 1 of the 1987 Philippine Constitution states that the state shall establish, maintain, and support a complete, adequate, and integrated system of education relevant to the needs of the people and society, while Section 5, Paragraph 4 of the same article states that the state shall promote teachers' professional advancement. Thus, teachers and other Department of Education officials must continue to seek new training and experiences to advance as educators.

Furthermore, tailored professional development programs can successfully satisfy individual requirements by identifying research practice strengths and areas for growth. This is based on considering teachers as lifelong learners and change agents in the educational environment. Through participation in action research, teachers can be enabled to participate in reflective practice, collaborative inquiry, and ongoing professional development.

The pursuit of educational excellence is a continuous journey, demanding a constant evolution of teaching practices and a commitment to innovation. LUCSUHIN National High School, recognizing the pivotal role of research in achieving this goal, has embarked on a transformative initiative: Project SERYE (Systematic Engagement in Research Yielding Educational Excellence). This project aims to empower teachers with the necessary research competencies to effectively design, conduct, and utilize research to enhance teaching and learning outcomes. The commitment is to bridge theory and practice, knowledge and action. Administrators can bridge the gap between present and desired competence levels by evaluating their research capacities. Through these professional development and capacity-building initiatives, teachers can enhance their research skills, contributing to a culture of continuous learning and improvement.

The rationale for this action research stems from the understanding that research is not merely an academic exercise but a powerful tool for improving educational practices. By

---

*Corresponding author: jeffrey.abad@deped.gov.ph

engaging teachers in research, Lucsuhin National High School seeks to enhance teaching quality. Research-informed teaching allows teachers to identify effective pedagogical strategies, tailor instruction to individual student needs, and stay abreast of current educational trends. It will also promote innovation and creativity. Research encourages teachers to explore new ideas, experiment with different approaches, and develop innovative solutions to challenges in the classroom. It also fosters professional growth in a way that engaging in research fosters a culture of inquiry, critical thinking, and continuous learning among teachers, leading to professional growth and development.

Furthermore, it also elevates school performance. Research-driven initiatives can lead to improved student learning outcomes, increased student engagement, and a more effective and efficient school environment. Action research also strengthens collaboration. Research projects encourage collaboration among teachers, fostering a sense of community and shared purpose within the school.

The significance of this initiative transcends individual teacher development to encompass broader objectives of school enhancement and community impact. This program acts as a cornerstone for teacher empowerment, enabling them to take charge of their professional growth and enrich the educational community. Through collaborative research endeavors and teacher-led initiatives, educators can leverage the power of research to enhance teaching practices and student outcomes.

While the vision of Project SERYE which stands for Systematic Engagement in Research for Yeilding Educational Excellence is ambitious, its success hinges on the research competencies of the teachers. To effectively implement this initiative, assessing the faculty's current research capabilities is crucial. This assessment will provide valuable insights into the current research skills through identifying strengths and weaknesses in research design, data collection, analysis, and interpretation. Assessing their research attitudes and beliefs, understanding teachers' perceptions of research and their willingness to engage in research activities, and assessing the availability of resources and support systems to facilitate research among teachers.

The teaching force of Lucsuhin National High School, as key agents of transformation in the academic landscape, play a crucial role in shaping the future of education in the Municipality. The holistic advancement of teachers goes hand in hand with the holistic development of students. A pathway can be created for teachers to become lifelong learners, reflective practitioners, and change agents within their educational context. The project catalyzes teacher empowerment, enabling educators to take ownership of their professional growth and contribute to the overall advancement of the educational landscape.

However, the success of the initiative depends on the joint efforts of teachers, school administrators, and educational stakeholders. Lucsuhin National High School teachers may build a culture of shared inquiry, reflection, and cooperation, resulting in a supportive ecosystem that regards research as a key component of teacher empowerment and school improvement. Bridges to excellence may be constructed via communal participation, resulting in comprehensive progress and a long-term foundation for continual professional growth and development. Furthermore, by enhancing action research, teachers are not only enabled to increase their own professional development but also contribute to the wider advancement of the educational landscape.

This action research, "Building Bridges to Excellence," is a crucial step towards realizing the vision of Project SERYE and establishing Lucsuhin National High School as a leading institution in educational innovation and excellence. By empowering teachers with the necessary research skills, the school can create a dynamic and transformative learning environment for all students.

In conclusion, this study represents a revolutionary endeavor aimed at encouraging teacher empowerment and pushing holistic growth within the educational community. Strengthening research competencies lays the groundwork for a future in which educators may lead with confidence, inspire with passion, and positively affect their students' lives via the transformational power of research.

B. Research Questions

This study aimed to enhance the research competencies among junior high school teachers of Lucsuhin National High School through Project SERYE (Systematic Engagement in Research Yielding Educational Excellence).

Specifically, this study sought to answer the following questions:

1. What is the participation rate of Lucsuhin National High School in the Division Conference of Basic Education Researchers in school years, 2023-2024 and 2024-2025?
2. How can the teachers' research competencies be assessed before and after the implementation of Project SERYE in terms of:
   1. formulating the research background;
   2. consolidating the review of related literature;
   3. determining the appropriate research method and procedure;
   4. collection, analysis, and interpretation of data and;
   5. formulating conclusions and recommendations?
3. Is there any significant difference between the teachers' research competencies before and after the implementation of Project SERYE?

2. Methodology

A. Research Design

The study utilized a descriptive research design as it is well-suited for capturing quantitative data on teachers' competencies before and after Project SERYE, specifically in skills such as formulating research backgrounds, conducting literature reviews, selecting methodologies, and analyzing data. This approach is instrumental for objectives seeking measurable outcomes, such as assessing participation rates and determining

significant differences in competencies pre- and post-implementation. By gathering numerical data, the descriptive design provides a clear, objective overview of teachers' progress, allowing for a more precise evaluation of the program's impact.

B. Research Instruments

The primary data gathering instruments used were narrative reports, which contain the participation rate of Lucsuhin National High School in the Division Conference of Basic Education Researchers in school years 2023-2024 and 2024-2025, and a survey questionnaire, which assessed the research competencies of the teachers before and after implementation of Project SERYE.

C. Data Collection

Data collection began with obtaining permission from the district supervisor to conduct the study. Once approval was granted, the researchers assessed the teachers' research competencies through a self-assessment survey before the implementation of Project SERYE.

Project SERYE was then implemented from August 30 to October 11, 2024. Following the implementation, the post-self-assessment survey and interview guide were administered to the respondents. Google Form was used to collect responses regarding the teachers' research competencies, both before and after the implementation of Project SERYE. These competencies were evaluated in areas such as formulating the research background, consolidating the review of related literature, determining the appropriate research method and procedure, data collection, analysis, and interpretation, as well as formulating conclusions and recommendations.

Additionally, relevant documents, including narrative reports on Project SERYE and data from the previous school year's Division Conference for Basic Education Researchers, were collected from the research coordinator, who also served as one of the researchers.

D. Data Analysis

The following descriptive and inferential statistics were used to treat the gathered data. Frequency distribution was used to describe the participation rate of Lucsuhin National High School in the Division Conference of Basic Education Researchers in school years, 2023-2024 and 2024-2025. Weighted mean and composite mean were used to determine the teachers' research competencies before and after the implementation of Project SERYE in terms of formulating the research background, consolidating the review of related literature, determining the appropriate research method and procedure, collection, analysis, and interpretation of data, and formulating conclusions and recommendations. Dependent T-Test was used to ascertain the significant difference between the teachers' research competencies before and after the implementation of Project SERYE.

3. Results and Discussions

A. Participation Rates of Lucsuhin National High School in the Division Conference of Basic Education Researchers for the School Years 2023-2024 and 2024-2025

Table 1
Participation rate of Lucsuhin national high school in the division conference of basic education researchers

School Year	Frequency	Relative Percentage
SY 2023-2024	7	7.29
SY 2024-2025	31	32.29

Table 1 reflects a significant increase in teacher participation from Lucsuhin National High School in the Division Conference of Basic Education Researchers between the school years 2023-2024 and 2024-2025. In SY 2023-2024, only 7 teachers participated, accounting for a relative percentage of 7.29%. However, in SY 2024-2025, the number of participating teachers rose sharply to 31, representing 32.29% of the faculty. This marked increase in participation aligns with the implementation of Project SERYE, a targeted initiative held from August 30 to October 11, 2024, aimed at enhancing educators' research capabilities. Project SERYE provided a comprehensive training program that addressed all critical stages of action and basic research, equipping teachers with the skills necessary to effectively conduct and apply research for educational improvement.

The timing of Project SERYE's implementation appears to correlate with the increase in conference participation, suggesting that the training program may have played a role in motivating and preparing teachers to engage in professional research activities. The project's focus on building research skills likely contributed to teachers' confidence and competence in attending and actively participating in the Division Conference, as they were better equipped to understand, conduct, and contribute to research discussions. This increase may also reflect a broader shift within the school toward a research-oriented culture, emphasizing continuous professional development and evidence-based practices.

Overall, the data indicates that Project SERYE was likely effective in its goal of fostering research skills and promoting active participation in research-based professional development opportunities.

There is a strong positive correlation between various training factors, such as content relevance, training environment, and presentation style, and overall training effectiveness, which enhances the learning abilities of teachers (Garavan et al., 2020). Furthermore, effective training not only improves employees' skills and performance but also contributes to higher levels of engagement and satisfaction within the workforce, thereby aligning with organizational goals.

B. Teachers' Research Competencies in the Pre- and Post-Implementation of Project SERYE

1) Formulating the Research Background

Table 2 presents the evaluation of teachers' research competencies in formulating the research background, before and after participating in the Project SERYE (Systematic

Table 2
Teachers' research competencies in formulating the research background

Indicators	Before		After	
	WM	**VI**	**WM**	**VI**
1. formulate and write a research title.	2.02	Proficient	2.81	Highly Proficient
2. describe the justification/reasons for conducting a specific research.	2.02	Proficient	2.74	Highly Proficient
3. state and present research questions and objectives.	2.05	Proficient	2.73	Highly Proficient
4. identify the scope and delimitation of research.	2.05	Proficient	2.75	Highly Proficient
5. cite the benefits and beneficiaries of research.	2.10	Proficient	2.77	Highly Proficient
Composite Mean	**2.05**	**Proficient**		**Highly Proficient**

1.00-1.75 – Beginning   1.76-2.50 – Proficient   2.51-3.25 – Highly Proficient   3.26-4.00 – Distinguished

Table 3
Teachers' research competencies in writing research in terms of consolidating the review of related literature

Indicators	Before		After	
	WM	**VI**	**WM**	**VI**
1. select relevant literature.	2.02	Proficient	2.77	Highly Proficient
2. synthesize information from generated literature.	2.04	Proficient	2.72	Highly Proficient
3. write coherent literature review.	2.04	Proficient	2.77	Highly Proficient
4. follow ethical standards in writing and presenting related literature.	2.07	Proficient	2.72	Highly Proficient
5. highlight the ways in which the present study reviewed the literature.	2.05	Proficient	2.73	Highly Proficient
Composite Mean	**2.04**	**Proficient**		**Highly Proficient**

1.00-1.75 – Beginning   1.76-2.50 – Proficient   2.51-3.25 – Highly Proficient   3.26-4.00 – Distinguished

Engagement in Research for Yielding Educational Excellence). The table shows the teachers' progress across five specific indicators, measured by their Weighted Mean (WM) and corresponding Verbal Interpretation (VI).

Before the training, teachers demonstrated proficiency in formulating and writing a research title, with a WM of 2.02, which is categorized as "Proficient." Similarly, they were proficient in describing the justification for conducting a research study (WM of 2.02), stating research questions and objectives (WM of 2.05), identifying the scope and delimitations of research (WM of 2.05), and citing the benefits and beneficiaries of the research (WM of 2.10), all rated as "Proficient."

After the completion of the project, there was a marked improvement in teachers' competencies across all indicators. The WM for formulating and writing a research title increased to 2.81, reflecting a shift to "Highly Proficient." This trend continued for all other indicators: describing the justification for the research (2.74), stating research questions and objectives (2.73), identifying the scope and delimitation (2.75), and citing the benefits and beneficiaries (2.77). These all improved to the "Highly Proficient" level, indicating that the teachers' abilities to engage in research were significantly enhanced through the training sessions.

The composite mean before the training was 2.05, categorized as "Proficient," but after the project, the teachers' overall competency was rated as "Highly Proficient," reflecting a notable positive shift in their research formulation skills. This suggests that Project SERYE effectively increased the teachers' confidence and competence in key aspects of research formulation, enabling them to conduct and apply educational research more effectively.

This finding aligns with the notion of Laverty (2018) who stated that structured professional development, particularly in the form of action research, enhances teachers' skills and confidence in addressing educational challenges within their classrooms. By engaging in targeted training, educators not only develop a deeper understanding of research methodologies but also gain practical insights that empower them to implement evidence-based practices, thereby improving their instructional effectiveness and student outcomes. Ultimately, fostering a culture of research among teachers is essential for continuous improvement in educational practices and for promoting a reflective approach to teaching

2) Consolidating the Review of Related Literature

Table 3 provides an analysis of teachers' research competencies in writing the review of related literature, assessing their skills before and after participating in the Project SERYE training. The indicators reflect key aspects of writing the literature review, with the competencies being evaluated through the Weighted Mean (WM) and Verbal Interpretation (VI).

Before the training, teachers were rated as "Proficient" in all areas, with WMs ranging from 2.02 to 2.07. Specifically, they were proficient in selecting relevant literature (WM of 2.02), synthesizing information from generated literature (WM of 2.04), writing a coherent literature review (WM of 2.04), following ethical standards in writing and presenting related literature (WM of 2.07), and highlighting the ways in which the present study reviewed the literature (WM of 2.05).

After the completion of the training, there was a significant improvement in the teachers' research competencies across all indicators. The teachers became "Highly Proficient" in each area, with the WMs ranging from 2.72 to 2.77. Specifically, they showed enhanced skills in selecting relevant literature (WM of 2.77), synthesizing information (WM of 2.72), writing a coherent review (WM of 2.77), adhering to ethical standards (WM of 2.72), and effectively highlighting the connections between the present study and the reviewed literature (WM of 2.73).

The composite mean before the training was 2.04, categorized as "Proficient," and after the training, the overall competency increased to the "Highly Proficient" level, indicating a substantial improvement in their ability to conduct and present literature reviews. This improvement suggests that the Project SERYE training was successful in enhancing the teachers' skills in reviewing related literature, a critical aspect of the research process.

Table 4
Teachers' research competencies in writing research in terms of determining the appropriate research method and procedure

Indicators	Before		After	
	WM	VI	WM	VI
1. choose appropriate research design.	2.07	Proficient	2.73	Highly Proficient
2. describe sampling techniques with target subjects of the study.	2.06	Proficient	2.73	Highly Proficient
3. plan data collection and analysis procedure.	2.06	Proficient	2.72	Highly Proficient
4. present written research methodology.	2.06	Proficient	2.73	Highly Proficient
5. utilize materials and ideas to produce quality research study.	2.02	Proficient	2.69	Highly Proficient
Composite Mean	**2.06**	**Proficient**		**Highly Proficient**

1.00-1.75 – Beginning   1.76-2.50 – Proficient   2.51-3.25 – Highly Proficient   3.26-4.00 – Distinguished

Table 5
Teachers' research competencies in writing research in terms of collection, analysis, and interpretation of data

Indicators	Before		After	
	WM	VI	WM	VI
1. use effective methods and process of collecting for the study.	2.07	Proficient	2.72	Highly Proficient
2. infer and explain patterns and themes from data.	2.02	Proficient	2.70	Highly Proficient
3. select appropriate statistical methods and techniques for the data analysis.	2.02	Proficient	2.65	Highly Proficient
4. interpret the results obtained from the data collected.	2.02	Proficient	2.68	Highly Proficient
5. relate the findings with pertinent literature.	2.05	Proficient	2.70	Highly Proficient
Composite Mean	**2.04**	**Proficient**		**Highly Proficient**

1.00-1.75 – Beginning   1.76-2.50 – Proficient   2.51-3.25 – Highly Proficient   3.26-4.00 – Distinguished

This is supported by the findings of Xu (2024) that stated that structured professional development programs significantly improve teachers' competencies in various research skills, including literature review, which is essential for effective educational research. By focusing on specific training methods, educators not only gain new knowledge but also develop a more profound understanding of how to critically engage with existing literature, thereby increasing their confidence and effectiveness in conducting research. Ultimately, enhancing these skills contributes to a more robust educational practice, as teachers become better equipped to apply research findings to their teaching methodologies and improve student outcomes.

3) Determining the Appropriate Research Method and Procedure

Table 4 illustrates the teachers' research competencies in determining the appropriate research method and procedure, comparing their abilities before and after participating in the Project SERYE training. The table includes five specific indicators, with the competencies measured through the Weighted Mean (WM) and Verbal Interpretation (VI).

Before the training, the teachers were rated as "Proficient" in all five indicators, with WMs ranging from 2.02 to 2.07. Specifically, they were proficient in choosing an appropriate research design (WM of 2.07), describing sampling techniques and target subjects (WM of 2.06), planning data collection and analysis procedures (WM of 2.06), presenting the written research methodology (WM of 2.06), and utilizing materials and ideas to produce a quality research study (WM of 2.02).

After the training, there was a clear improvement across all areas, as teachers' competencies increased to the "Highly Proficient" level, with WMs ranging from 2.69 to 2.73. Notably, they showed enhanced abilities in choosing the appropriate research design (WM of 2.73), describing sampling techniques (WM of 2.73), planning data collection and analysis (WM of 2.72), presenting the research methodology (WM of 2.73), and utilizing materials to produce quality research (WM of 2.69).

The composite mean before the training was 2.06, categorized as "Proficient," but after the training, the overall competency level was rated as "Highly Proficient," reflecting a substantial improvement in the teachers' ability to determine and apply appropriate research methods and procedures. This positive shift underscores the effectiveness of Project SERYE training in strengthening these critical research skills, which are essential for conducting high-quality educational research.

This conclusion is supported by findings of the study of Polat and Kutlu (2022) that demonstrated significant improvements in teachers' research skills across various domains after participating in structured training programs, such as those based on Wlodkowski's motivational approach and coaching methods. The enhancement of these skills not only equips educators with the necessary tools to engage in effective research practices but also fosters a culture of inquiry within educational settings, ultimately leading to improved teaching strategies and student outcomes. By investing in professional development that focuses on research competencies, educational institutions can ensure that teachers are well-prepared to navigate the complexities of educational research and apply their findings to enhance classroom practices.

4) Collection, Analysis, and Interpretation of Data

Table 5 presents the teachers' research competencies in the collection, analysis, and interpretation of data, comparing their skills before and after completing the Project SERYE training. The table evaluates their proficiency across five key indicators, with each competency measured by the Weighted Mean (WM) and the corresponding Verbal Interpretation (VI).

Before the training, teachers were categorized as "Proficient" in all areas, with WMs ranging from 2.02 to 2.07. Specifically, they were proficient in using effective methods and processes for data collection (WM of 2.07), inferring and explaining patterns and themes from data (WM of 2.02), selecting appropriate statistical methods for data analysis (WM of 2.02), interpreting the results from data collected (WM of 2.02), and relating findings to pertinent literature (WM of 2.05).

Following the training, there was a significant improvement in the teachers' competencies, as they advanced to the "Highly Proficient" level across all indicators. The WMs for these competencies ranged from 2.65 to 2.72. Notably, they showed

Table 6
Teachers' research competencies in writing research in terms of formulating conclusions and recommendations

Indicators	Before		After	
	WM	VI	WM	VI
1. draw conclusion from patterns and themes.	2.07	Proficient	2.72	Highly Proficient
2. formulate recommendations based oconclusion	2.05	Proficient	2.69	Highly Proficient
3. craft recommendations that are practical, feasible, and relevant.	2.07	Proficient	2.67	Highly Proficient
4. emphasize the possible contribution and effect of the conducted study a specific field or area.	2.09	Proficient	2.70	Highly Proficient
5. offer new research possibilities through the results of the study.	2.09	Proficient	2.67	Highly Proficient
Composite Mean	**2.07**	**Proficient**		**Highly Proficient**

1.00-1.75 – Beginning   1.76-2.50 – Proficient   2.51-3.25 – Highly Proficient   3.26-4.00 – Distinguished

Table 7
Difference between the teachers' research competencies before and after the implementation of project SERYE

Teachers' Research Competencies	T	P-value	T-Crit	Decision on H_o	Interpretation
formulating the research background	1247.28	.00	5.32	Reject Ho	Significant
consolidating the review of related literature	2429.57	.00	5.32	Reject Ho	Significant
determining the appropriate research method and procedure	3591.20	.00	5.32	Reject Ho	Significant
collection, analysis, and interpretation of data	1936.00	.00	5.32	Reject Ho	Significant
formulating conclusions and recommendations	2638.34	.00	5.32	Reject Ho	Significant

enhanced skills in using effective data collection methods (WM of 2.72), inferring and explaining patterns (WM of 2.70), selecting appropriate statistical methods (WM of 2.65), interpreting results (WM of 2.68), and relating findings with literature (WM of 2.70).

The composite mean before the training was 2.04, categorized as "Proficient," but after the training, the teachers' overall competency increased to "Highly Proficient." This substantial improvement highlights the effectiveness of Project SERYE in enhancing teachers' abilities in crucial aspects of data collection, analysis, and interpretation, empowering them to conduct more rigorous and insightful research.

This is supported by Harris (2024) showing that structured professional development programs significantly improve educators' skills in these areas, enabling them to effectively gather and analyze data, which is essential for producing high-quality educational research. By equipping teachers with the necessary tools and methodologies for data handling, these training sessions foster a deeper understanding of the research process, ultimately leading to more informed decision-making and improved educational practices within their classrooms. As teachers become more proficient in data analysis and interpretation, they are better positioned to apply their findings to enhance student learning outcomes and contribute to the broader educational community.

5) Formulating Conclusions and Recommendations

Table 6 presents an analysis of teachers' research competencies in formulating conclusions and recommendations, comparing their abilities before and after participating in the Project SERYE training. The table evaluates five key indicators, with the teachers' competencies measured using the Weighted Mean (WM) and Verbal Interpretation (VI).

Before the training, teachers were rated as "Proficient" in all areas, with WMs ranging from 2.05 to 2.09. Specifically, they were proficient in drawing conclusions from patterns and themes (WM of 2.07), formulating recommendations based on conclusions (WM of 2.05), crafting practical, feasible, and relevant recommendations (WM of 2.07), emphasizing the possible contributions and effects of the study (WM of 2.09), and offering new research possibilities through the study's results (WM of 2.09).

After the training, the teachers' competencies improved, with all indicators reaching the "Highly Proficient" level. The WMs for these competencies ranged from 2.67 to 2.72. The teachers demonstrated enhanced abilities in drawing conclusions from patterns (WM of 2.72), formulating recommendations based on conclusions (WM of 2.69), crafting practical recommendations (WM of 2.67), emphasizing the contributions of the study (WM of 2.70), and offering new research possibilities (WM of 2.67). The composite mean before the training was 2.07, categorized as "Proficient," but after the training, the overall competency increased to "Highly Proficient." This significant improvement indicates that the Project SERYE training successfully strengthened the teachers' ability to formulate conclusions and recommendations, which are vital components of the research process. The enhanced competencies suggest that the teachers are now better equipped to draw meaningful conclusions and provide valuable, actionable recommendations based on their research findings.

This is corroborated by the findings of Xu (2024) which demonstrated significant enhancements in teachers' competencies related to drawing conclusions and making actionable recommendations after engaging in structured professional development programs. By focusing on critical aspects of the research process, such as data interpretation and the synthesis of findings, these training sessions empower educators to analyze their research effectively and translate their insights into practical strategies that can be implemented in their classrooms. Consequently, this development fosters a more reflective teaching practice, enabling teachers to contribute meaningfully to educational discourse and improve student learning outcomes based on evidence-based conclusions.

4. Difference Between the Teachers' Research Competencies Before and After the Implementation of Project SERYE

Table 7 provides a comparison of teachers' research competencies before and after the implementation of Project SERYE, showing the statistical differences in competencies across five key areas.

For all five areas—formulating the research background,

consolidating the review of related literature, determining the appropriate research method and procedure, collection, analysis, and interpretation of data, and formulating conclusions and recommendations—the T-values are significantly higher than the T-critical value (5.32), and the P-value is 0.00 is less than significance level of 0.05, leading to the rejection of the null hypothesis (Ho). Thus, there is a significant difference before and after Project SERYE.

The decision to "Reject Ho" and the associated P-value of 0.00 indicate that the improvements in teachers' research competencies after the Project SERYE training are statistically significant. This means that the training program had a notable and measurable impact on enhancing teachers' skills in all the areas assessed. Overall, the results suggest that Project SERYE was effective in improving teachers' research competencies across the five key aspects of the research process.

This is supported by findings of Khan et al. (2016) that showed significant increases in teachers' abilities related to data collection, analysis, interpretation, and the formulation of conclusions and recommendations, as measured through a structured assessment framework. The enhanced competencies reflect a comprehensive development of research skills, enabling educators to engage more deeply with educational research and apply their findings effectively in practice. As a result, this professional development initiative not only strengthens individual teacher capabilities but also contributes to a culture of evidence-based practice within educational settings, ultimately benefiting student learning outcomes.

5. Conclusion

The study concluded that there is a significant increase in teacher participation in the Division Conference of Basic Education Researchers, with a rise from 7.29% in SY 2023-2024 to 32.29% in SY 2024-2025. Alos, there is a significant improvement in teachers' research competencies across various stages of the research process, from formulating research backgrounds to drawing conclusions and recommendations, highlighting the effectiveness of Project SERYE in enhancing their research competencies. Moreover, the Project SERYE significantly enhanced teachers' research competencies, as evidenced by the statistically significant improvements across all research stages, leading to a rejection of the null hypothesis.

References

[1] Center, I. T. (n.d.). 1987 Philippine Constitution - the LawPhil Project. https://lawphil.net/consti/cons1987.html

[2] Garavan, T. N., O'Brien, F., Duggan, J., Gubbins, C., Lai, Y., Carbery, R., Heneghan, S., Lannon, R., Sheehan, M., & Grant, K. (2020). The current state of research on training effectiveness. In Springer eBooks (pp. 99–152).

[3] Gepila, Emejidio. (2020). Assessing Teachers Using Philippine Standards for Teachers. Universal Journal of Educational Research. 8. 739-746.

[4] Harris, T. (2024, September 11). Programs. Idaho Division of Career Technical Education. https://cte.idaho.gov/programs/

[5] Khan, N.N., Kolumbayeva, S.Z., Karsybayeva, R.K., Nabuova, R.A., Kurmanbekova, M.B. & Syzdykbayeva, A.D. (2016). Evaluation of the Program Effectiveness of Research Competence Development in Prospective Elementary School Teachers. International Journal of Environmental and Science Education, 11(18), 12299-12316.

[6] Laverty, Corinne. (2018). Educational research: A practical guide.

[7] Polat, B., & Kutlu, O. (2022). Investigation of the effectiveness of the Research Skills Teaching Program. International Journal of Assessment Tools in Education, 9(1), 39–60.

[8] Xu, W. (2024). Enhancing educators' research skills in secondary education in Huaihua, China. Journal of Education and Educational Research, 8(2), 337–341.