Cultivating Higher Order Thinking Skills in MAPEH 7 through Group Problem-Solving Project (GPP)

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ABSTRACT

This action research explored the effectiveness of the Group Problem-Solving Project (GPP) as an instructional strategy in cultivating higher order thinking skills (HOTS) among Grade 7 students in MAPEH at Jaclupan National High School. The study was conducted in response to the observed challenges students faced in demonstrating analysis, evaluation, and creativity in MAPEH learning tasks. Through collaborative and problem-based learning activities, the GPP enabled students to address real-life scenarios in Music, Arts, Physical Education, and Health by working together to analyze problems, propose solutions, and produce creative outputs. A pretest-posttest design was used to measure students' proficiency levels before and after the intervention. Pretest results showed a mean percentage score of 54.44%, indicating that most students were at the "Nearly Proficient" level. After the GPP strategy was applied, posttest results revealed a significant improvement, with a mean percentage score of 79.56%, and more students reaching "Proficient" and "Highly Proficient" levels.

The findings demonstrated that GPP effectively enhanced students' critical and creative thinking skills by engaging them in authentic, collaborative learning experiences. It also narrowed the performance gap among learners, as reflected by the decrease in standard deviation from 4.992 to 2.96, showing that even low-performing students improved significantly. Aside from academic gains, students also developed teamwork, communication, and decision-making skills—essential components of 21st-century learning. Based on these results, the GPP strategy is recommended as a best practice for integrating higher order thinking development in MAPEH instruction, helping students become more engaged, reflective, and capable problem-solvers in diverse and meaningful contexts.

Keywords: Group Problem Solving Project, MAPEH 7, Higher Order Thinking Skills(HOTS) , Critical Thinking, Creative Learning, Collaborative Learning, Student-Centered Learning, Performance-Based Assessment, 21st Century Skills

INTRODUCTION

In today's rapidly developing world, education should go beyond only transmission of knowledge. The 21st century demands individuals who can seriously think, solve complex problems and suit new challenges. High-order thinking skills (hots), such as analysis, evaluation and creativity, are necessary for students to flourish in a rapidly interconnected and dynamic global landscape (P21, 2015). These skills enable students to navigate uncertainty, make informed decisions and make meaningful contribution to society.

MAPEH (Music, Art, Physical Education and Health) is a unique subject that combines physical, creative and cognitive domains. While traditionally seen as a platform for skill development and artistic expression, MAPEH also provides a rich avenue to the cultivation of HOTS. Its interdisciplinary nature allows students to explore connections between different fields, which promotes the deep understanding of how knowledge can be applied in real -life circumstances.

Despite its potential, MAPEH education often focuses on technical skills and knowledge acquisitions, leaving

little room for the development of critical thinking and problem-solving abilities. This difference is clear in many educational systems including the Philippines, where students often struggle with hot-based tasks. For example, international assessments such as PISA and TIMSS have shown that Filipino students perform below the global average in critical thinking and problem-solving (Department of Education, 2019).

The K to 12 Basic Education Program in the Philippines emphasizes the importance of HOTS in all subjects including MAPEH. However, implementing these skills in the classroom is an important challenge. Many teachers lack training and resources to integrate HOTS effectively, and curricula often prefer content coverage over skill development. This disconnects between policy and practice highlights the need for innovative approaches to teaching and learning.

At Jaclupan National High School, the need to address this gap is particularly pressing. The results of the third and fourth periodical tests last School Year 2023-2024 based on the item analysis mastery level revealed that least mastered items are mostly HOTS (Higher Order Thinking Skills) questions to which 48% of the students' responses is found out to be incorrect. This indicates a widespread struggle with critical thinking and problem-solving, underscoring the urgency of implementing strategies to nurture these skills.

Problem-solving is a cornerstone of higher-order thinking. In MAPEH, students can apply problem-solving skills in diverse contexts, such as strategizing in sports, creating art with limited resources, or addressing community health issues. These activities not only deepen their understanding of the subject, but also prepare them for the challenges of the real world. For instance, in physical education, students can analyze opponents' strengths and weaknesses to develop game strategies (Griffin & Butler, 2005), while in health education, they can identify and propose solutions to public health problems (Lau, 2011).

Collaborative learning, particularly through group projects, has been shown to enhance critical thinking and problem-solving skills. When students work together, they are exposed to diverse perspectives, learn to communicate effectively, and develop teamwork skills. The Group Problem-Solving Project (GPP) proposed in this study leverages these benefits by engaging students in collaborative, real-world tasks that require them to think critically and creatively.

This research is based in the constructive learning theory, which suggests that students are best learned when they actively construct knowledge through experience and reflection. GPP aligns with this approach by providing students to find out, question and create opportunities. By engaging in hands-on problems-solving activities, students can connect theoretical concepts with practical applications, which can make their learning more meaningful and permanent.

MAPEH's interdisciplinary nature makes it an ideal subject for cultivating HOTS. By exploring the connections between Music, Arts, Physical Education, and Health, students can develop a holistic understanding of how different fields intersect. This approach not only enhances their cognitive abilities but also encourages them to think creatively and innovatively.

One of the key strengths of the GPP is its focus on real-world applications. By dealing with problems that are relevant to their lives and communities, students can see the practical value of their education. For example, they might design a fitness program for their school, create an art installation that addresses a social issue, or develop a campaign to promote mental health awareness. These activities make learning more engaging and impactful.

The need for targeted interventions was highlighted by mastery in high-order thinking skills among students of Grade 7 at Jaclupan National High School. The Group Problem-Solving Project (GPP) is designed to address this gap by providing students with structured opportunities to ractice significant thinking and problem-solving. Through guided activities and collaborative projects, students can develop confidence and skills necessary to deal with complex challenges.

Beyond educational success, the development of HOTS prepares students to learn for lifelong learning. In a world where knowledge is constantly evolving, the ability to seriously think and solve problems is more

valuable than ever. By equipping students with these skills, GPP aims to strengthen them to navigate future challenges and seize opportunities in their personal and professional life.

GPP MAPEH represents a transformative approach to education. By focusing on active problem-solving from passive learning, it encourages students to take ownership of their learning and develop growth mindset. This approach not only enhances their academic performance, but also promotes resilience, creativity, and a sense of responsibility.

This action research seeks to contribute to extensive conversations about educational innovation. By demonstrating the effectiveness of GPP in HOTS cultivation, it provides a practical framework that can be adapted and scaled in other contexts. The findings of this study have the potential to inform curriculum development, teacher training and policy-making, eventually benefiting students across the Philippines and beyond.

Ultimately, this research is inspired by a vision of education of education that empowers students to reach their full potential. By cultivating High Order Thinking Skills through Group Problem-Solving Project, we can prepare students not only to excel in MAPEH, but can also be ready to become thoughtful, creative and proactive individuals. This study represents a step towards reimagining education as a tool for personal and social change, where students are equipped with confidence and ability to face the challenges of the 21st century.

Action Research Questions

How does the integration of group problem-solving project (GPP) enhance higher order thinking skills in MAPEH 7 students of Jaclupan National High School during the school year 2024-2025?

Innovation, Intervention, or Strategy

With the aim of enhancing higher order thinking skills (HOTS) in Music, Arts, Physical Education and Health (MAPEH) of Grade 7 Students of Jaclupan National High School in Talisay City Division for the school year 2024-2025, the researchers utilized the Group Problem-Solving project (GPP). It is an intervention designed to that teaches students to stimulate critical thinking, knowledge evaluation, perspective analysis, and creative problem-solving among students. Moreover, GPP introduces the integration of critical thinking and problem-solving approaches which will not only deepen the students' understanding of MAPEH concepts but also provide them with transferable skills that are essential for success beyond the classroom.

Pre-implementation Phase. In this phase, the researchers make the necessary preparations and coordinate with key individuals involved in the recommended interventions.

The researchers submit the intervention plan to the school head for approval, making modifications as necessary based on any feedback or suggestions. It was the followed by seeking approval from the chosen students, explaining their inclusion in the study. Students are informed about the possibility of experiencing minor inconveniences, such as frequent updates, and the benefits of participating, including the completion of their activities and the opportunity for academic growth. After which, the researchers organize all materials required for the implementation, including the intervention tools, monitoring tools, and evaluation tools (pretest and posttest). This ensures a smooth and efficient process for carrying out the strategies and measuring their effectiveness.

Implementation Phase. In this phase, the researchers implement the proposed strategy, utilizing the Group Problem-Solving Project (GPP) to enhance critical thinking and problem-solving skills, specifically aimed at cultivating higher-order thinking skills in MAPEH 7. Participants took both a diagnostic test and a summative test, which serve as benchmarks for the teacher-researchers to monitor and evaluate the learners' progress throughout the study. These assessments will provide critical insights into the effectiveness of the GPP strategy in fostering the desired academic and cognitive growth.

The purpose of this Group Problem-Solving Project (GPP) is to design an exercise program that incorporates Southeast Asian Dance as a form of physical activity and an outlet of emotion. This project aims to cultivate

higher order thinking skills, cultural appreciation, physical fitness, and overall well-being among MAPEH 7 students. By combining traditional dance forms with exercise, students can develop strength, coordination, flexibility, and endurance while learning about their cultural heritage.

The GPP objectives are to introduce students to the rich cultural heritage of Southeast Asia through traditional Contemporary Dance, promote physical fitness and healthy lifestyle habits among MAPEH 7 students, improve students' coordination, flexibility, strength, and endurance through dance-based exercises and to encourage teamwork, creativity, and critical thinking skills through group problem-solving activities.

With the GPP the students undergone four project tasks namely: Research and Selection of Southeast Asian Dances, Exercise Program Design, Choreography and Routine Development and Presentation and Evaluation.

First, “Research and Selection of Southeast Asian Dances” task, the students were divided into two groups and each group chose a specific Southeast Asian dance to research. Each team should gather information about the history, significance, costumes, music, and movements associated with their chosen Southeast Asian dance. At the end of the task, the team present the findings to the whole group and discuss the unique characteristics of dance.

Second, “Exercise Program Design” task, the students brainstormed as a group to identify the key movements and elements of dance that can be incorporated into the exercise program. They were asked to determine the fitness components that the exercise program should target, such as cardiovascular endurance, muscular strength, flexibility, and coordination. After that, the group developed a structured exercise routine that includes warm-up, main workout, and cool-down phases. They ensured that the exercise program is suitable for different fitness levels and can be modified for individual needs.

Then, “Choreography and Routine Development” task, each group created dance routines based on the selected dance and exercise program. They collaborated to integrate the dance routines with the exercise program, ensuring that each routine targets specific fitness components. The learners practiced and refined the routines, adjusted to improve flow, difficulty levels, and overall effectiveness.

Lastly, “Presentation and Evaluation” task, the learners organized a final presentation where each group showcased their dance routines and exercise program to the class. They encouraged audience participation by teaching basic dance steps and exercises to the classmates. They also evaluated the effectiveness of the exercise program by collecting feedback from participants, considering factors such as enjoyment, difficulty, and perceived fitness benefits and discussed the cultural significance and impact of the project on students' understanding of Southeast Asian Dances and physical fitness.

Post-Implementation Phase. In this phase, the teacher-researchers assessed the effectiveness of the Group Problem-Solving Project (GPP) as a strategy to enhance critical thinking and problem-solving skills. This was done through a thorough analysis and reflection on the data collected from the post test. The results of the strategy were carefully evaluated, and successfully adopted as a tool to cultivate students' higher-order thinking skills.

Furthermore, this strategy was shared with other schools for benchmarking and used as a reference for future action research. The findings of the study were also published by the researchers in a reputable journal to contribute to the broader academic community.

METHODS

In this chapter, we focus on strategies, processes, and techniques for data collection, alongside ethical considerations. Gathering data or evidence for analysis is a crucial part of any research as it shapes the outcomes and conclusions drawn.

Research Design

This study used an action research design, incorporating a pretest-posttest analysis to assess the effectiveness

of the intervention. Action research aims to improve educational practice by means of reflective cycles through problem assessment, active intervention, and reflective learning (Bondía & Cortés,2022). Action research design is used in this research to determine if there is an enhancement of the critical thinking and problem-solving abilities of Grade 7 learners after the implementation of group problem-solving project.

Participants/ Sampling and/or Other Sources of Data/ Information

The participants of this study were the 30 purposively chosen Grade 7 students of Jaclupan National High School in Talisay City Division for the school year 2024-2025. The study focused on Grade 7 students because this is a critical stage in their cognitive and social development. At this age, students are beginning to develop more advanced thinking skills, making it an ideal time to introduce strategies that foster higher-order thinking. By focusing on Grade 7 students, the study can serve as a pilot for implementing similar strategies in other grade levels. The findings can be used to refine and scale the approach across the school or even other institutions. Below is the number of participants:

Table 1. The Participants of the Research

Grade 7 Students	Male	Female	Total
Grade 7A	1	29	30

These purposively selected participants utilized the Group Problem-Solving Project as an intervention to cultivate Higher Order Thinking Skills (HOTS) in MAPEH 7.

Research Instruments

For quantitative data, the research instruments utilized in this study was a researcher-made 30-item pre-test/post-test focusing on HOTS (Higher Order Thinking Skills) questions in MAPEH for the first quarter of the school year 2024-2025.

Data Gathering Procedure

This phase involves the Before Data Gathering, Actual Data Gathering and After Data Collection as outlined below.

To address ethical concerns in this study, the researcher adhered to established protocols to ensure the rights and privacy of all participants were protected. First, approval was obtained from the Schools Division Superintendent before commencing the research. A formal permission letter was also sent to the school head, outlining the purpose and scope of the study.

Additionally, a written consent was secured from the parents or guardians of the participants to ensure transparency and avoid any potential issues. The researchers also sought explicit consent from the participants themselves, clearly explaining the study's objectives and their role in the research. Participants were assured that their involvement was voluntary and that they could withdraw at any time without consequences. To safeguard their privacy, the researcher guaranteed the confidentiality and anonymity of all responses, ensuring that no identifying information would be disclosed in the study's findings.

Furthermore, the researchers maintained academic integrity by properly referencing all sources of data and materials used in the study, giving due credit to the original authors. These measures were taken to uphold ethical standards, protect the participants' rights, and ensure the credibility and validity of the research.

A researcher-made pre-test focusing on competencies in contemporary and emerging music and arts of the Philippines and the southeast Asia and their cultural influences, mental health, and physical activities consisting of 30 items validated by experts, was administered to the Grade 7 learners. A Mean Percentage Score (MPS) was then computed and used as baseline data to measure the problem-solving ability in Higher

Order Thinking Skills (HOTS) of Grade 7 students before applying the Group Problem-Solving Project (GPP) as an intervention.

The intervention, which was the Group Problem-Solving Project (GPP) was implemented with the participants over a period of eight sessions. The learners were given instructional tools with assessment rubrics in each project tasks completed. After the intervention, a post-test was administered to the participants. The MPS was calculated and compared to the pre-test result.

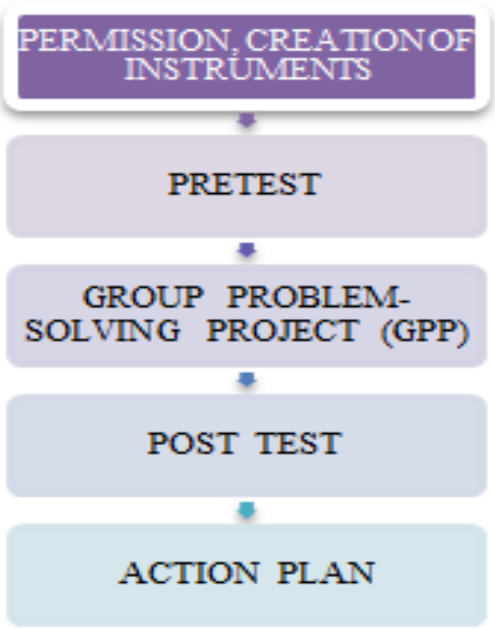

Figure 1. The Flow Chart of Teaching MAPEH for Grade 7

Data Analysis

The collected data were systematically recorded, analyzed, and interpreted to evaluate the effectiveness of Group Problem-Solving Project in enhancing higher-order thinking skills among MAPEH 7 students. The following statistical tools were used to analyze the quantitative data: Frequency counts and percentage. These were used to determine the number of the participants' score in pre-test and post-tests and percentage of the increase of test results. In finding the students' level of performance in MAPEH 7, the following scale was used for interpretation:

Score	Description
26-30	excellent
21-25	very satisfactory
16-20	satisfactory
11-15	needs improvement
6-10	poor

Mean Percentage Score. This was used to determine the learners' level of performance in MAPEH 7.

To interpret mean percentage scores of the students, the following table of interpretation was used:

Score	Description
85-100%	highly proficient
75-84%	proficient

50-74%	nearly proficient
25-49%	low proficient
below 25%	not proficient

Ethical Considerations

The researchers will apply the principles of ethical considerations developed by Bryman and Bell (2007). Regarding the involvement of this study, the participants will not be subjected to harm in any ways. Prior to the study, full consent will be obtained from the participants and the

teachers of Jaclupan National High School. In addition, the protection of the privacy of research participants will be ensured. Voluntary participation of respondents in the research will be treated very important. Moreover, they have the rights to withdraw from the study at any stage if they want to do so. Informed Consent. It is made clear to the respondents/participants that their participation in this study is voluntary and that they are not compelled to participate should they believe it detrimental to their interest. Furthermore, the respondents/participants will be informed that the research is conducted solely for academic purposes and the data gathered from them shall be exclusively used for such purpose.

Confidentiality Pledge. The researchers ensure the confidentiality of the gathered data relative to the personal information of the respondents/participants of this study and shall not be disclosed to the public at any cause. This can be guaranteed by the following activities:

The names of the respondents will be replaced by codes.

The sheet containing the name of the respondents shall be removed and be kept or destroyed when no longer needed for the research.

The researcher shall have the sole access to the code's master list.

Files containing research data shall be password protected and encrypted to keep the data safe.

Authorization to Access Private Information. The interest of the respondents or participants is protected by Republic Act 10173 also known as the Data Privacy Act of 2012, henceforth, any pertinent data or information of the respondents/participants of this study shall not be accessed, transported, or copied without the approval and consent of the Regional Research Committee.

RESULTS AND REFLECTION

This section presents a detailed discussion of the study's findings and reflections, organized according to the specific research questions outlined in the Action Research. The data gathered, including the results from both diagnostic and summative tests during the first and second trial runs, have been systematically assessed and analyzed following the administration of the tests. This analysis aims to evaluate the effectiveness of the implemented strategies and their impact on student learning outcomes, offering key insights into how these interventions have influenced students' understanding and performance.

Presentation, Analysis, And Interpretation Of Data

Pretest Result

The Pretest Results reveal that the overall Mean Percentage Score is 54.44%, which falls within the "Nearly Proficient" level. This suggests that while the students have some foundational knowledge and basic understanding of the learning competencies in MAPEH 7, many have not yet mastered the content or developed higher-order thinking skills needed for deeper analysis and application. Notably, competencies such as "Discussing common adolescents' concerns that can affect mental health" and "Safeguarding their mental

health" had the lowest scores (20.00% to 43.33%), falling into the "Not Proficient" to "Low Proficient" range. These results highlight specific gaps in learners' personal and socio-emotional understanding, which are essential components of MAPEH. Additionally, the high Standard Deviation of 4.992 and a Mode of 20 indicate a wide range in student performance, with a significant number of students scoring above the average but also many scoring below it, showing inconsistency in mastery across the class.

Across the 10 learning competencies, students performed better in visual and performing arts, particularly in the items requiring them to "Evaluate creative works" and "Execute fitness concepts related to combative sport," where some scores reached Proficient levels (76.67%). However, competencies demanding evaluation, application, and problem-solving which are key indicators of higher-order thinking tended to score lower. This discrepancy underlines the need for targeted interventions that go beyond rote learning.

Hence, the results validate the importance of implementing the Group Problem-Solving Project (GPP). The GPP is expected to not only boost content mastery but also sharpen students' collaborative, analytical, and reflective thinking, which are essential for progressing toward proficient and advanced levels of competency in MAPEH.

Table 2 Level of the MAPEH Performance of Grade 7A students in Pretest (N = 30)

Learning Competencies	Test Item No.	No. of Correct Responses	Percentage of Correct Responses	Proficiency level
Discuss how representative contemporary and emerging performing and visual arts of the Philippines and selected Southeast Asian countries influence their cultural identity and diversity	1	15	50.00%	Nearly Proficient
	3	18	60.00%	Nearly Proficient
	4	23	76.67%	Proficient
Distinguish subjects, themes, concepts, mediums, processes, techniques, and/or practices applied in the contemporary and emerging performing and visual arts of the Philippines and selected Southeast Asian countries.	2	18	60.00%	Nearly Proficient
	5	19	63.33%	Nearly Proficient
	12	16	53.33%	Nearly Proficient
Evaluate representative creative works of the Philippines and selected Southeast Asian countries based on cultural influences in identified subjects, themes, concepts, mediums, processes, techniques, and/or practices.	6	10	33.33%	Low Proficient
	7	14	46.67%	Low Proficient
	8	20	66.67%	Nearly Proficient
Produce creative works about contemporary and emerging popular performing and visual arts of the Philippines	9	21	70.00%	Nearly Proficient
	10	15	50.00%	Nearly Proficient
	11	20	66.67%	Nearly Proficient
	13	23	76.67%	Proficient
Assess their competency in the production of creative work based on concepts, processes, techniques, and/or practices used in selected Philippine and Southeast Asian contemporary and emerging	14	20	50.00%	Nearly Proficient
	15	22	50.00%	Nearly Proficient

performing and visual arts.				
Discuss common adolescents' concerns that can affect mental health	17	6	20.00%	Not Proficient
	29	8	26.67%	Low Proficient
Apply ways to safeguard their mental health.	18	17	56.67%	Nearly Proficient
	20	11	36.67%	Low Proficient
	24	7	23.33%	Not Proficient
	28	13	43.33%	Low Proficient
	30	19	63.33%	Nearly Proficient
Recognize the positive effects of physical activity participation on mental health.	16	20	66.67%	Nearly Proficient
	19	14	46.67%	Low Proficient
	21	8	26.67%	Low Proficient
	23	19	63.33%	Nearly Proficient
	27	16	53.33%	Nearly Proficient
Perform physical activities by applying principles and concepts of target games to solve tactical problems for active living	26	14	50.00%	Nearly Proficient
Execute appropriate skills and fitness concepts related to combative sport	22	21	70.00%	Nearly Proficient
	25	23	76.67%	Proficient
Mean	16.33			
Mode	20			
Standard Deviation	4.992			
Mean Percentage Score	54.44			

Posttest Result

The posttest results show a strong overall performance among students across the learning competencies, reflecting significant mastery of the content covered in the MAPEH 7. The Mean Percentage Score for the posttest was 79.56%, indicating that most students performed at the "Proficient" or "Highly Proficient" level across various competencies. Notably, the students demonstrated exceptional understanding and application in areas such as evaluating representative creative works (Learning Competency 3), producing creative works about contemporary arts (Learning Competency 4), and executing appropriate skills related to combative sports (Learning Competency 10), with some achieving 100% correct responses.

The standard deviation of 2.96 suggests that while students showed consistent performance, there was a slight variation in scores, with most learners performing within a close range of the mean. Additionally, competencies related to mental health awareness and safeguarding mental health showed notable improvement, with the highest scores in this area reaching 96.67%. This indicates that the students not only grasped the concepts but also applied them effectively, particularly in recognizing the importance of physical activity in promoting mental health and its positive effects. Overall, these results highlight the success of the Group Problem-Solving Project (GPP) approach in developing students' higher-order thinking skills, fostering their ability to analyze, evaluate, and create in various domains of learning.

Table 3 Level of the MAPEH Performance of Grade 7A students in Posttest

Learning Competencies	Test Item No.	No. of Correct Responses	Percentage of Correct Responses	Proficiency level
1. Discuss how representative contemporary and emerging performing and visual arts of the Philippines and selected Southeast Asian countries influence their cultural identity and diversity	1	20	66.67%	Nearly Proficient
	3	23	76.67%	Proficient
	4	25	83.33%	Proficient
2. Distinguish subjects, themes, concepts, mediums, processes, techniques, and/or practices applied in the contemporary and emerging performing and visual arts of the Philippines and selected Southeast Asian countries.	2	22	73.33%	Nearly Proficient
	5	26	86.67%	Highly Proficient
	12	26	86.67%	Highly Proficient
3. Evaluate representative creative works of the Philippines and selected Southeast Asian countries based on cultural influences in identified subjects, themes, concepts, mediums, processes, techniques, and/or practices.	6	28	93.33%	Highly Proficient
	7	24	80.00%	Proficient
	8	25	83.33%	Proficient
4. Produce creative works about contemporary and emerging popular performing and visual arts of the Philippines	9	26	86.67%	Highly Proficient
	10	20	66.67%	Nearly Proficient
	11	21	70.00%	Nearly Proficient
	13	25	83.33%	Proficient
5. Assess their competency in the production of creative work based on concepts, processes, techniques, and/or practices used in selected Philippine and Southeast Asian contemporary and emerging performing and visual arts.	14	24	80.00%	Proficient
	15	25	83.33%	Proficient
6. Discuss common adolescents' concerns that can affect mental health	17	20	66.67%	Nearly Proficient
	29	20	66.67%	Nearly Proficient
7. Apply ways to safeguard their mental health.	18	22	73.33%	Nearly Proficient
	20	23	76.67%	Proficient
	24	27	90.00%	Highly Proficient
	28	23	76.67%	Proficient
	30	29	96.67%	Highly Proficient
8. Recognize the positive effects of physical activity participation on mental health.	16	20	66.67%	Nearly Proficient
	19	20	66.67%	Nearly Proficient
	21	24	80.00%	Proficient

	23	20	66.67%	Nearly Proficient
	27	26	86.67%	Highly Proficient
9. Perform physical activities by applying principles and concepts of target games to solve tactical problems for active living	26	24	80.00%	Proficient
10. Execute appropriate skills and fitness concepts related to combative sport	22	30	100.00%	Highly Proficient
	25	28	93.33%	Highly Proficient
Mean	23.87			
Mode	20			
Standard Deviation	2.96			
Mean Percentage Score	79.56			

Pre-Post Test Comparative Analysis

The Pre-Post Test Comparative Analysis shows notable improvements across respondents in terms of both absolute scores and percentage of correct responses. The mean score increased from 16.33 on the pretest to 23.87 on the posttest, which indicates a positive shift in overall performance. The mean percentage score also saw a substantial increase from 54.44% on the pretest to 79.56% on the posttest, reflecting an improvement of 25.12% in the students' proficiency levels. This trend suggests that the Group Problem-Solving Project (GPP) effectively enhanced the students' higher-order thinking skills, particularly in analyzing, evaluating, and applying the concepts covered in MAPEH 7.

The mode remained consistent at 20 across both the pretest and posttest, meaning that the most frequent score among participants stayed the same, but the overall distribution of scores shifted toward higher values after the intervention. The standard deviation also decreased from 4.992 in the pretest to 2.96 in the posttest, indicating that the posttest scores were more closely clustered around the mean, reflecting greater uniformity in student performance after the GPP. In terms of score differences, several students experienced significant improvements, with the highest increase observed in participants L20 (56.67%), L21 (53.33%), and L22 (50.00%), who all started with relatively lower pretest scores and achieved near-perfect posttest scores. Overall, the results suggest that the GPP intervention had a positive and substantial impact on students' learning outcomes, especially in improving their ability to engage in complex problem-solving tasks.

Table 4 Comparative Analysis of Pre-Post Test Results

Participants	Pretest Score	Percentage of Correct Responses	Posttest Score	Percentage of Correct Responses	Score Difference	Score Difference Percentage
L1	24	50.00%	29	66.67%	5	16.67%
L2	24	60.00%	29	76.67%	5	16.67%
L3	25	76.67%	28	83.33%	3	10.00%
L4	26	60.00%	28	73.33%	2	6.67%
L5	28	63.33%	28	86.67%	0	0.00%
L6	28	53.33%	28	86.67%	0	0.00%
L7	17	33.33%	27	93.33%	10	33.33%
L8	17	46.67%	27	80.00%	10	33.33%

L9	17	66.67%	27	83.33%	10	33.33%
L10	18	70.00%	26	86.67%	8	26.67%
L11	19	50.00%	26	66.67%	7	23.33%
L12	19	66.67%	26	70.00%	7	23.33%
L13	20	76.67%	25	83.33%	5	16.67%
L14	20	50.00%	25	80.00%	5	16.67%
L15	20	50.00%	25	83.33%	5	16.67%
L16	21	20.00%	25	66.67%	4	13.33%
L17	21	26.67%	24	66.67%	3	10.00%
L18	22	56.67%	24	73.33%	2	6.67%
L19	23	36.67%	24	76.67%	1	3.33%
L20	6	23.33%	23	90.00%	17	56.67%
L21	6	43.33%	22	76.67%	16	53.33%
L22	6	63.33%	21	96.67%	15	50.00%
L23	7	66.67%	20	66.67%	13	43.33%
L24	7	46.67%	20	66.67%	13	43.33%
L25	7	26.67%	19	80.00%	12	40.00%
L26	8	63.33%	19	66.67%	11	36.67%
L27	8	53.33%	18	86.67%	10	33.33%
L28	8	50.00%	18	80.00%	10	33.33%
L29	9	70.00%	18	100.00%	9	30.00%
L30	9	76.67%	17	93.33%	8	26.67%
Mean	16.33		23.87			
Mode	20		20			
Standard Deviation	4.992		2.96			
Mean Percentage Score	54.44		79.56			

Reflection

Conducting this action research entitled “Cultivating Higher Order Thinking Skills in MAPEH 7 through Group Problem-Solving Project (GPP)” has been a rewarding and eye-opening experience. I embarked on this study with the intention of addressing a common challenge in the classroom: how to develop students' critical and creative thinking skills in a subject as diverse as MAPEH. I observed that most of my students often relied on memorization and struggled when faced with tasks that required deeper analysis or synthesis. This led me to explore the use of collaborative problem-solving as a tool to engage learners in higher-order thinking while also fostering cooperation and real-life application.

The integration of the Group Problem-Solving Project (GPP) into the MAPEH 7 curriculum allowed students

to explore various concepts through hands-on, meaningful group activities. These projects were designed to encourage students to analyze situations, evaluate information, and produce creative outputs based on the lessons in music, arts, PE, and health. Throughout the process, students were challenged not only to apply what they learned but also to justify their decisions, collaborate effectively, and present their outcomes with confidence. It was inspiring to witness how learners became more engaged and responsible when given ownership of their learning.

Quantitative data gathered from the pretest and posttest results revealed significant improvement in the students' performance. The mean percentage score increased from 54.44% in the pretest to 79.56% in the posttest, with several students showing remarkable growth. This data clearly indicates that the GPP strategy was effective in enhancing the learners' comprehension and mastery of higher-order skills. Moreover, the reduction in standard deviation from 4.99 to 2.96 suggests that the gap in learning achievement among students was narrowed, benefiting both struggling and advanced learners alike.

Beyond the statistics, the qualitative impact of the study was equally significant. Students showed improved collaboration, better communication skills, and greater enthusiasm toward MAPEH. I observed a shift in classroom dynamics—learners were more motivated, more participative, and more open to exploring complex issues related to culture, health, fitness, and the arts. Their confidence in expressing ideas grew noticeably, and they began to see themselves not just as students, but as creators and problem-solvers. This transformation reinforced my belief in the power of student-centered, inquiry-based learning.

In conclusion, this action research has affirmed the value of integrating problem-solving and collaborative learning in developing higher-order thinking skills. It has strengthened my commitment to move beyond traditional teaching methods and embrace approaches that challenge and empower my students. The success of the GPP in MAPEH 7 motivates me to further refine and sustain this practice, and possibly expand its use across other subjects. As an educator, I am proud to witness the growth of my learners—not just academically, but holistically—and I look forward to continuously improving my craft to better serve their needs.

RECOMMENDATIONS

Based on the findings and limitations of this study, the following recommendations are proposed:

Apply the GPP in Other Subjects: To test the versatility and effectiveness of the GPP beyond MAPEH, it is recommended that the project be implemented in other subject areas such as Mathematics, Science, and English. This could provide insights into how well the strategy supports the development of critical thinking and problem-solving skills across the curriculum.

Provide Continuous Teacher Training: Since the success of the GPP heavily relies on effective teacher facilitation, ongoing professional development for teachers is essential. Training programs should focus on enhancing teachers' ability to manage group work, facilitate problem-solving activities, and integrate critical thinking into their instructional methods.

Incorporate Technology: To further enhance student engagement and collaborative learning, the integration of digital tools and technology should be considered. Using online platforms for group discussions, simulations, or interactive problem-solving activities could broaden the scope of the GPP and make it more accessible to different learning styles.

Conduct Long-Term Studies: Future research should explore the long-term effects of the GPP on student performance and higher-order thinking skills. A longitudinal study could provide more comprehensive data on how sustained exposure to problem-solving activities impacts students' cognitive development and academic success over time.

By addressing these recommendations, educators and researchers can further refine the GPP and maximize its potential in improving student learning outcomes.

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