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Project Competency and Performance Recovery (CPR) and Students' Level of Performance in Technology and Livelihood Education

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ABSTRACT

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This study aimed to investigate the effectiveness of Project Competency and Performance Recovery (CPR) using quantitative research, specifically the one-group pretest-post-test design. The research study was conducted in Palo Alto Integrated School, where one-hundred twenty (120) respondents were included from Grades 7 – 10, respectively. The mean, standard deviation and paired t-test were used to examine the results of the learners' academic performance from the second quarter and third quarter. The study's findings revealed that at the reopening of classes, the mean academic performance of learners from grades 7 – 10 was at the 'developing' stage. This was before the implementation of Project CPR. On the other hand, after the implementation, there was a slight improvement in the learners' mean academic performance, particularly from grades 8 and 10, which improved from "developing" to "Approaching Proficiency". Only grade 7 learners have not improved after the implementation of the project since it is statistically

evident that there is no significant difference between the results of the second quarter and the third quarter's performance. Moreover, findings also show that Project CPR was effective in recovering learning losses. The data for the test of significant difference between the second and third quarters revealed a significant difference, particularly from grades 8, 9, and 10. The study's conclusive findings will serve as the foundation for replication with a larger sample size and a broader focus.

INTRODUCTION

The COVID-19 epidemic has made learning losses—characterized as reductions in knowledge and abilities brought on by academic disruptions—even worse (Zhdanov et al., 2022). Numerous nations have had severe educational setbacks, according to research on COVID-19 learning losses and recovery techniques. Research conducted in India and Nigeria revealed learning deficiencies of roughly 0.3–0.6 in language skills and 0.6–0.7 standard deviations in math (Adeniran et al., 2022). A study conducted in Ghana revealed a 66% reduction in numeracy improvements over three months, demonstrating the substantial learning losses that occur during school closures (Sabates et al., 2021). Emotional elements, a reduction in learning time, a change in teaching methods, and limited access to education are all factors that contribute to learning losses (Zhdanov et al., 2022). However, research suggests that targeted interventions can aid in recovery.. A curriculum modification approach in Nigeria resulted in a complete recovery in just two months (Singh et al., 2024).

The impact of COVID-19 on children's educational outcomes is evident and substantial. The outbreak disrupted education more severely than at any other time in history. Concerns have been raised over the possible negative effects and repercussions of halting in-person instruction in classrooms across the globe during the pandemic. The scope of this catastrophe is worldwide. (Ancheta & Ancheta, 2020). Similar to this, in India, within six months of schools reopening, two-thirds of the learning loss was restored, with roughly 24% of the recovery coming from government-run remedial programs (Singh et al., 2024; Singh et al., 2022). Notably, recovery tended to be progressive, helping underprivileged pupils more than learning loss, which was regressive (Singh et al., 2022). In a variety of settings, tutoring has become a viable and affordable method of reducing learning losses and hastening recovery (Patrinos, 2022).

Due to a lack of digital access and home learning tools, the impact is not fairly distributed, with underprivileged learners suffering more losses (Jaurigue-Sublay, 2023; Pek et al., 2024). Learners in primary school are most impacted, especially those from underprivileged backgrounds (Singh et al., 2024). Some areas have implemented recovery plans to deal with these issues, including redistributing funds to schools and involving communities (Singh et al., 2024). To avoid long-term educational challenges, it is imperative to evaluate the degree

of learning losses and put remedial measures in place as soon as schools reopen (Zhdanov et al., 2022).

Throughout and after the COVID-19 pandemic, the Philippines implemented several policies to alleviate learning gaps and losses. The Basic Education-Learning Continuity Plan, which the Department of Education adopted, featured curricular modifications, realigned learning resources, and various learning delivery methods (Go et al., 2022). Teachers and learning leaders used diversified instruction, remedial reading sessions, and cross-curricular basic reading exercises (Hamoc, 2023). In order to give all students, particularly those with restricted access to technology, equitable access to education, modular learning was used (Agaton & Cueto, 2021). Nonetheless, issues remained, such as a lack of parental support, the need for teacher professional development, a shortage of resources, and student absenteeism (Hamoc, 2023). Additionally, teachers had to deal with pupils' complicated learning demands, overlapping responsibilities, and low motivation (Ondras & Alvero, 2023). Upskilling teachers, boosting financing for educational materials, enhancing cooperation with parents and stakeholders, and enabling instructors to concentrate on struggling students are some suggestions for reducing these difficulties (Hamoc, 2023; Ondras & Alvero, 2023).

Through DepEd Order No. 012, s. to "Ensure learning continuity through K 12 curriculum adjustments, alignment of learning materials, deployment of multiple learning delivery modalities, provision of corresponding training for teachers and school leaders, and proper orientation of learners' parents or guardians," DepEd required the adoption of the Basic Education Learning Continuity Plan in the Time of COVID-19 in 2020. However, BE-LCP did not live up to the expectation. Unexpected outcomes emerged from blended learning, which resulted in learning gaps. Although in-person instruction has grown in popularity, a sobering reality has emerged. Among the fundamental knowledge and abilities many learners have found difficult to acquire are writing, reading, and math operations. Various circumstances, including poor academic motivation, a lack of physical education programs, inefficient teaching methods, and problems with money and health, cause learning loss. To lessen the long-term damage to the learner's productivity and well-being, learning loss must be regained as soon as possible (Ganar, 2021).

Restarting schools has been challenging, but there is still hope. This reopening period could be a chance to update methods, tactics, and strategies for teaching and learning that were severely deficient even before the pandemic—or reconsider our approach to school leadership and educational management. To close learning gaps, schools must gather and evaluate data, collaborate with stakeholders and community partners to offer complete support and implement intervention measures. These include social-emotional development, exploring learning opportunities through extended tutoring and scaffolding, developing coherent communication channels for tracking learners' progress and feedback

systems and providing intensive homeroom assistance and home visits (Angrist et al., 2020).

Schools can creatively respond to the needs of their most vulnerable learners during this period of adaptability and innovation while striving to eliminate risky procedures and systems incorporated into their pre-pandemic educational model. In this regard, ensuring the quality and accessibility of fundamental education is the only way to close the learning gaps. TLE focuses on developing technical-vocational skills that would give a learner useful life skills. As a result, this cannot be accomplished if learners lack fundamental literacy and numeracy skills. Both the learning of core reading and numeracy skills and the development of learners' technical and vocational talents are necessary. Because they include following directions or instructions, practical tasks necessitate reading, writing, and comprehension skills. Understanding the above requisites, TLE department prioritizes access and quality. Thus, the department propose to utilize Project Visitation Augmentation Care and Concern in Nurturing Every Student (VACCINES) and Project Service in Nurturing Students and Youths (SINSAY) for access and Project Cognitive, Affective and Psychomotor (CAP) for quality. These individual projects are all under the department's project umbrella for learning recovery entitled Project Competency and Performance Recovery (CPR). Schools recognizes the challenges of the post COVID-19 era following the full blast implementation of in-person classes. The Department of Education (DepEd) promptly addresses these educational challenges by launching MATATAG Agenda. Hence, this project is anchored on this. In this study, project CPR was tested as to its effectiveness in bridging learning gaps in TLE.

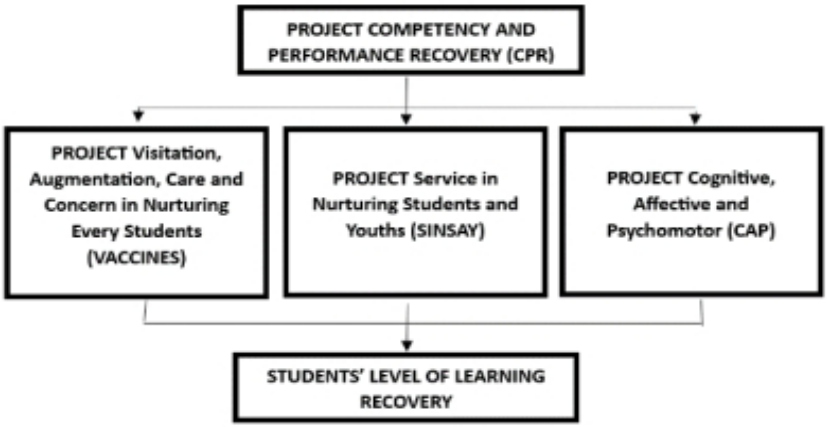
FRAMEWORK

Understanding the above requisites, the TLE department prioritizes access and quality. Thus, the department proposed utilizing Project Visitation Augmentation Care and Concern in Nurturing Every Student (VACCINES) and Project Service in Nurturing Students and Youths (SINSAY) for access and Project Cognitive, Affective and Psychomotor (CAP) for quality. These individual projects are all under the department's project umbrella for learning recovery, entitled Project Competency and Performance Recovery (CPR). SDO Calamba City recognizes the challenges of the post-COVID-19 era following the full-blast implementation of in-person classes. The Department of Education (DepEd) promptly addresses these educational challenges by launching the MATATAG Agenda. Hence, this project is anchored on this.

In this study, project CPR was tested as to its effectiveness in bridging learning gaps in TLE.

FRAMEWORK

Figure 1
Conceptual Framework of the Study



The proponents present the variables based on the proposed project, which serves as a learning recovery program of the TLE Department.

The framework shows how Project Competency and Performance Recovery contribute to recovering learning losses in Technology and Livelihood Education (TLE). By implementing three distinct processes (VACCINES, SINSAY, and CAP), learners can cope with their academics, thus minimizing their absences, which translates to better performance.

OBJECTIVES OF THE STUDY

This study was conducted to determine the effectiveness of Project Competency and Performance Recovery (CPR) in bridging learning gaps in TLE. Specifically, it aims to measure the performance level of learners in TLE before and after implementing Project Competency and Performance Recovery (CPR).

METHODOLOGY

Research Design

This study used a descriptive quantitative design. It involved four (4) groups of learners from Grades 7 – 10. Two grading periods, representing the before-project CPR implementation and the after-project CPR implementation, were used to compare the respondents' performance.

Research Site

This study was conducted in SDO Calamba City. The 120 respondents were students in grades 7 to 10 at Palo Alto Integrated School.

Participants

The participants in the study were a total of 120 learners. Thirty (30) learners from each grade level comprised the distribution of respondents. Purposive sampling was used. These respondents were low performers who lag in academics due to extra absences. Only the top thirty (30) students from each grade level were used in this quasi-experimental research. This study utilized a one-group pretest-post-test design.

Instrumentation

The researchers used the learner-respondents' second and third-quarter grades to determine the respondents' performance levels before and after the implementation of project CPR. Another instrument used was the Simple TLE Intervention Materials (STIMS), a compilation of learning tasks that respondents must complete to catch up on the missed lessons. Also, an individual learning and monitoring plan (ILMP) was made for each learner who lagged due to absenteeism. Teachers' Daily Lesson Logs were also checked daily to ensure that the explicit and implicit instruction for literacy and numeracy was included.

Research Ethics Protocol

Every respondent was informed that participation was entirely voluntary. Respondents were also assured that their names and the names of their sections would be kept private. Respondents were informed that the questionnaire is anonymous and does not ask for respondents' or department heads' names or other personal information. Other than that, no information will be disclosed to the public, any other person, or this paper.

RESULTS AND DISCUSSION

Performance Level of Students in Technology and Livelihood Education (TLE)

Table 1
Mean academic performance of learners before the implementation of Project CPR.

GROUP	MEAN	SD	DESCRIPTIVE INTERPRETATION
Grade 7	76.87	1.84	Developing
Grade 8	77.70	1.71	Developing
Grade 9	76.10	1.14	Developing
Grade 10	76.80	1.39	Developing

Legend: 90 above: Advanced; 85-89 Proficient; 80 - 84: Approaching Proficiency; 75-79: Developing; 74 Below: Beginner

Table 5 shows the mean academic performance of Grades 7 – 10 learners in Technology and Livelihood Education in the Second Quarter before implementing Project CPR. The mean score of Grade 7 learners for the second quarter is 76.87, interpreted as "Developing." Likewise, the mean score of Grade 8 learners is 77.70, also interpreted as "Developing". Grades 9 and 10, with mean scores of 76.10 and 76.80, respectively, were also in the "Developing" stage. The mean scores of learners in each grade level only show that they need improvement in their academic performance.

For learners in the developing stage, increasing academic performance in Technology and Livelihood Education (TLE) is critical since it gives them the practical skills necessary for economic and personal growth. Learners are developing the fundamental skills and knowledge to influence their future employment and career decisions during this critical time. TLE encourages problem-solving, critical thinking, and experiential learning—all of which help learners prepare for obstacles they may face in the real world. Improving TLE performance guarantees that learners are more equipped to adapt, create, and thrive in various disciplines, including entrepreneurship, agriculture, industrial arts, and home economics, in a work market that is changing quickly due to technological improvements. Enhancing academic performance in TLE also contributes to closing the skills gap in emerging nations, promoting national growth, and lowering unemployment by producing a workforce that is more knowledgeable and capable (Go et al., 2022).

Table 2

Mean academic performance of learners after the implementation of Project CPR.

GROUP	MEAN	SD	DESCRIPTIVE INTERPRETATION
Grade 7	77.30	2.24	Developing
Grade 8	80.77	2.71	Approaching Proficiency
Grade 9	77.10	2.14	Developing
Grade 10	80.00	2.39	Approaching Developing

Legend: 90 above: Advanced; 85-89 Proficient; 80 - 84: Approaching Proficiency; 75-79: Developing; 74 Below: Beginner

Table 2 shows the mean academic performance of Grades 7 – 10 learners in Technology and Livelihood Education in the Third Quarter after implementing Project CPR. The mean scores of Grade 7 and 9 learners for the third quarter are 77.30 and 77.10, respectively, interpreted as "Developing." On the other hand, the mean scores of Grades 8 and 10 learners are 80.77 and 80.00, respectively, interpreted as "Approaching Proficiency."

The mean scores of learners in each grade level show relative improvement in performance for both grade 8 and 10 learners and slight improvement in grades 7 and 9. However, the improvement in grade 7 and 9 learners is almost unnoticeable.

Closing learning gaps may be challenging for seventh-grade learners for a number of reasons. At this point, learners are moving from elementary school to more advanced academic standards, frequently calling for more sophisticated reasoning, problem-solving techniques, and a greater sense of responsibility. Learners may have gaps in their learning if they struggle to understand more complicated concepts due to insufficient basic abilities from earlier grades. Additionally, they may find it more difficult to concentrate and maintain motivation due to the pressure of keeping up with new courses like advanced math or science as well as the social and emotional changes that come with puberty. These difficulties may worsen in the absence of focused assistance, making closing the learning gaps more challenging (Moscoviz & Evans, n.d.)

Table 3

Test of significant difference between the before and after Project CPR Implementation

Group	Test	Mean	SD	t-value	df	Mean Diff	Cohen's d	Effect Size
Grade 7	Second Quarter	76.87	1.84					
	Third Quarter	77.30	2.24	0201	29	0.63	1.027	Large

**Test is Significant @ p value <0.05; Cohen's d: 0.01–0.49: Small; 0.50–0.79: Medium;0.80 or higher: Large.

The table implies that the null hypothesis is accepted and that there is no significant difference between the performance of learners in TLE before and after the implementation of Project CPR based on the mean academic performance of grade 7 group (M=76.87 SD=8.34) and third quarter mean academic performance of grade 7 learners (M=77.30, SD=2.24), conditions [t(28)=0.201, p<0.05]. Therefore, Project CPR did not improve learners' performance in Grade 7.

The result shows that Project CPR should be evaluated to check where enhancement should be made to address the needs of the grade 7 learners. To ensure that intervention programs successfully meet the requirements of learners and provide favorable results, they should be reviewed and improved. Frequent assessment aids in determining the program's advantages and disadvantages, enabling teachers to make informed judgments and modify their methods to meet their learners' needs better. Additionally, it guarantees that the program will continue to apply to changing educational standards and a range of learner's needs. By improving these programs in response to comments and results, we can maximize their impact and give learners the most excellent support possible while encouraging ongoing development. Intervention techniques may become antiquated or ineffectual without continual assessment and development, resulting in resource waste and lost chances for student development (Torres, 2021).

Table 4

Test of significant difference between the before and after Project CPR Implementation

Group	Test	Mean	SD	t-value	df	Mean Diff	Cohen's d	Effect Size
Grade 8	Second Quarter	77.70	1.71					
	Third Quarter	80.77	2.71	0.000	29	3.07	1.010	Large

**Test is Significant @ p value <0.05; Cohen's d: 0.01–0.49: Small; 0.50–0.79: Medium;0.80 or higher: Large.

The table shows that the null hypothesis is rejected and that there is a significant difference between the performance of learners in TLE before and after the implementation of Project CPR based on the mean academic performance of the grade 8 group in the second quarter (M=77.70, SD=1.71) and third quarter (M=80.77, SD=2.71), conditions [t (28)=0.000, p<0.05]. The result indicates that Project CPR has effectively improved the academic performance of grade 8 learners.

Projects implementing contextualized intervention are essential for raising learners' achievement and bridging learning gaps because they adapt instructional methods to each learner's unique requirements, surroundings, and backgrounds. To make teachings more accessible and meaningful, instructors might match interventions with learners' existing knowledge, cultural context, and real-life

experiences. This connection engages learners and facilitates their comprehension and application of new ideas. In addition to addressing the unique difficulties that certain learner groups encounter, contextualized interventions ensure that support is tailored to the person's and the community's requirements rather than being one-size-fits-all. These programs are, therefore, better at closing learning gaps and promoting academic achievement (Madrazo & Dio, 2020).

Table 5

Test of significance difference between the before and after Project CPR Implementation

Group	Test	Mean	SD	t-value	df	Mean Diff	Cohen's d	Effect Size
Grade 9	Second Quarter	76.10	1.14					
	Third Quarter	77.10	2.14	0.000	29	1.00	0.67	Large

**Test is Significant @ p value <0.05; Cohen's d: 0.01–0.49: Small; 0.50–0.79: Medium;0.80 or higher: Large.

There is a significant difference between the performance of learners in TLE before and after the implementation of Project CPR based on the mean academic performance of the grade 9 group in the second quarter (M=77.10, SD=1.14) and third quarter (M=31.2, SD=2.71), conditions [t (28) =0.000, p<0.05]. The result indicates that Project CPR has effectively improved the academic performance of grade 9 learners.

Since contextualized intervention projects offer education closely related to the learner's academic, social, and cultural contexts, they are essential for raising the learner's achievement and bridging learning gaps. These interventions make classes more exciting and easier to understand by inserting local context and real-life scenarios into the learning process. This enables learners to establish connections between new ideas and what they already know. They can overcome certain learning obstacles because of this relevance, increasing motivation and fostering deeper knowledge. Contextualized interventions are also better at identifying and bridging long-lasting learning gaps since they are designed to address issues within specific communities or learner populations. They establish a more fair and inclusive learning environment in this way, giving every student the chance to achieve (Madrazo & Dio, 2020).

Similarly, since intervention projects give learners who are failing or at risk of falling behind focused attention, they are crucial for raising learner's performance and bridging learning gaps. To target particular areas of weakness, these projects frequently employ specialized techniques and materials, guaranteeing that learners get the individualized attention they require. Intervention programs assist learners in developing the fundamental abilities required for academic achievement by concentrating on their unique learning requirements. By making sure that all learners, regardless of where they are coming from, have the chance to catch up and advance with their peers, they also advance equity. Intervention

programs, therefore, improve overall student achievement and confidence in addition to filling up learning gaps (Peregrino et al., 2022).

Table 6
Test of significant difference between the before and after Project CPR Implementation

Group	Test	Mean	SD	t-value	df	Mean Diff	Cohen's d	Effect Size
Grade 10	Second Quarter	76.80	1.39					
	Third Quarter	80.00	2.39	0.000	29	3.20	0.73	Large

**Test is Significant @ p value <0.05; Cohen's d: 0.01–0.49: Small; 0.50–0.79: Medium;0.80 or higher: Large.

The result shows that there is a significant difference between the performance of learners in TLE before and after the implementation of Project CPR based on the mean academic performance of the grade 10 group in the second quarter (M=76.80, SD=1.39) and third quarter (M=80.00, SD=2.39), conditions [t (28) =0.000, p<0.05]. The result indicates that Project CPR has effectively improved the academic performance of grade 10 learners.

Intervention projects are essential to raising performance and bridging learning gaps for learners in higher grade level at a critical juncture in their academic careers. Any deficiencies in core knowledge can greatly impact learners' achievement at this level because they are getting ready for a more challenging curriculum and future academic or career pathways. Intervention projects tackle areas where learners may struggle, such as math, science, or language abilities, and provide focused help and education customized to each learner's requirements. These assignments help learners keep on track with their peers, reinforce key ideas, and increase confidence. Intervention programs give Grade 10 learners the tools to thrive in post-secondary education or the job by bridging these learning gaps early (Torres, 2021).

CONCLUSION

Only the "developing" level was reached by low performers in Grades 7 through 10 before the start of Project CPR. This represents the learners' performance level after the reopening of schools since the pandemic's outbreak. However, after the implementation of Project CPR data show that a relative improvement was evident. The intervention was effective in improving the performance of learners particularly for Grades 8, 9 and 10. Learning losses and improving learners' performance were evident in all three grade levels (8, 9, and 10) except grade 7. Seventh-grade learners may have trouble filling in learning gaps because of high academic expectations, trouble grasping challenging ideas, and pressure

to stay motivated. This is due to insufficient basic abilities from earlier grades, pressure from new courses, and social and emotional changes during transition. Remember that these seventh-grade learners were also affected by the two-year lockdown. Perhaps there were contributory factors to this, which the study failed to present empirically. As a result, teachers will probably need to devise strategies for supporting learners who were disproportionately affected by the pandemic while also instructing learners who did not exhibit decreased growth in the future. Learning interventions are important to help recover learning losses. Interventions that were "promising" for enhancing learning outcomes included remedial education and more classroom time. Like other learning interventions, Project Competency and Performance Recovery (CPR) improves performance among low performers and has its gray areas. Enhancement of the procedure is necessary to fit into the needs of the learners, particularly in grade 7. The most important result of this study is that it demonstrates specific ways that teachers, through projects and interventions, can help improve learners' performance at the bottom of the class distribution. Small wins are considered big wins in this project. The fact that these learners have improved, however little, gives reason for optimism that, with greater willpower, learning recovery is feasible.

TRANSLATIONAL RESEARCH

Project Competency and Performance Recovery (CPR) effectively improves low performers' performance in TLE and should be continuously utilized and implemented. The findings of this study may help school administrators prepare programs, projects, and activities that will help teachers and students improve their performance. Teachers may be able to improve their knowledge and skills by devising effective and efficient teaching strategies to help learners improve their performance and achievement levels. Each learning result and related learning experiences may be detailed in the curriculum, allowing teachers to select appropriate teaching techniques, approaches, and activities for their learners. Since an intervention program directly impacts the entire educational environment, it is significant for students, instructors, and school principals. According to the school's success objectives, it is a strategic tool that the principal uses to manage academic difficulties and enhance student achievements. Differentiated education that caters to each student's unique learning needs is made possible by teachers' ability to offer specialized support to students with difficulty. This creates a more productive and inclusive learning atmosphere in the classroom. Intervention programs help children overcome obstacles to learning, increase their self-esteem, and perform better academically—all of which contribute to equity and success for all students.

CONFLICTS OF INTEREST AND FUNDING

The authors declare that they have no conflicts of interest, financial or otherwise, that could influence or bias the content of this article. This study was conducted independently without any external funding from organizations or individuals that could have a vested interest in the findings.

The data supporting the findings of this study are available upon request to ensure transparency and facilitate independent verification of the results. AI was utilized ethically solely to enhance readability, with due diligence and mindfulness applied to ensure that it did not contribute to the analysis or interpretation of the content.

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