

Impact of Project Score (Science Class Optimize for Remedial Education) on the Academic Performance of Tenth Grade in Life Science

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A Master's Thesis Presented to the Faculty of the Graduate Program School of Teacher Education the National Teachers College

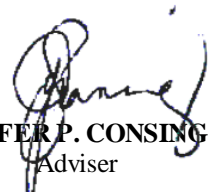
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APPROVAL SHEET

This thesis hereto entitled, “IMPACT OF PROJECT SCORE (SCIENCE CLASS OPTIMIZE FOR REMEDIAL EDUCATION) ON THE ACADEMIC PERFORMANCE OF TENTH GRADE IN LIFE SCIENCE”, prepared and submitted by KATHLEEN D. GUTIERREZ in partial fulfilment of the requirements for the degree of MASTER OF ARTS IN EDUCATION, major in SCIENCE, has been examined and is recommended for acceptance and approval for ORAL EXAMINATION.



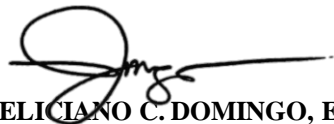
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- Kath

DEDICATION

This intellectual piece of work is humbly dedicated to my family, relatives, friends, colleagues, co-researchers, students and above all to the Almighty God who never fails to give me strength, wisdom and guidance to successfully accomplished this achievement.

To those people who have been my aspiration and bring inspiration to finish this work, my sincerest and immense gratitude to all of you. Truly, your presence motivated me to complete my research journey.

- Kath

ABSTRACT

This quasi-experimental study examined the impact of Project SCoRE in improving the learners' academic performance in Science 10. The study involved students in Grade 10 under Life Science at Bagbaguin National High School. The research utilized a quasi-experimental design, specifically the pretest and posttest experimental group design. To guarantee that the pretest effectively assessed the desired learning competencies and yielded consistent findings, instrument validation and reliability testing were conducted.

After the full implementation, the collected data were analyzed and interpreted using descriptive and inferential statistics with support from JASP, a free and intuitive statistical software. The Shapiro-Wilk test was first employed to assess the normality of score distributions. Due to several Most Essential Learning Competencies (MELCs) yielding non-normal results, the Wilcoxon signed-rank test was chosen as the appropriate non-parametric alternative. The analysis was performed both per MELC and for the total test score.

The learners' performance before the intervention revealed limited achievements and minimal variability, with few students exhibiting advanced understanding. This indicated a critical learning gap, particularly in Life Science. The pretest outcomes across the eight MELCs clearly suggested that students began the intervention with minimal prior knowledge and a generally low level of conceptual mastery. Post-test data demonstrated a significant rise in student achievement across all eight MELCs. The most prominent improvements were seen in topics related to the reproductive system and species diversity. The application of the Wilcoxon signed-rank test revealed significant gains in student achievement across all eight MELCs.

The statistical findings showed a considerable improvement in student performance from pre-test to post-test, with a substantial improvement in mastery levels among students who had previously demonstrated low performance. Overall, the posttest results confirmed that Project SCoRE not only improved overall academic performance but also addressed specific knowledge gaps effectively. Its impact underscored its value as a structured, research-based approach to enhancing mastery and increasing learner engagement.

Keywords: Remediation, Learning Gap, Science Education.

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CHAPTER ONE INTRODUCTION

➤ *The Problem and its Background*

Contemporary education confronts significant challenges, particularly within the pedagogical domain. The expectation placed upon educators to achieve quality education is immense, especially as numerous educational institutions face scrutiny for their perceived failure to produce competitive and highly skilled graduates. This challenge is often attributed to pervasive issues among teaching personnel, such as reported disregard for student well-being, the practice of falsifying compliance reports, and engagement in external activities, such as buy-and-sell ventures for supplementary income (PNU PISA Report, 2020). Addressing these systemic issues is crucial for resolving the persistent problem of non-readers and slow learners within the school system.

Effectively eliminating the prevalence of non-readers and slow learners requires educators to exercise full attention and deliberate consideration in their instructional strategies and all educational activities. Teachers are obligated to take decisive action to resolve these learning deficiencies, recognizing that the future of their students is fundamentally at stake. These imperative underscores a significant professional challenge that educators must wholeheartedly embrace, performing their duties with utmost integrity and comprehensive commitment (Acido and Caballes, 2022).

The severity of these educational challenges is starkly reflected in the results of the Programme for International Student Assessment (PISA), administered by the Organization for Economic Co-operation and Development (OECD). PISA is a globally recognized and highly credible international assessment that enables countries to gauge learner competence against global standards, evaluating three fundamental core domains: Reading Literacy, Mathematics Literacy, and Science Literacy (PNU PISA Report, 2020).

The results from PISA 2018 placed the Philippines among the lowest-ranking nations worldwide in all three domains. Notably, more than 80% of Filipino students scored below Level 2—the minimum proficiency level deemed necessary for effective functioning in a knowledge-based society. This pattern of low achievement persisted in the most recent 2022 PISA results, where Filipino learners continued to rank among the weakest globally in Mathematics, Reading, and Science (Chi, 2023). While subsequent findings indicated a slight improvement in Mathematics and Reading scores, the Science score registered a one-point decline (Acido and Caballes, 2022). These persistent trends highlight the nation's ongoing challenge in substantially improving educational outcomes, with particular concern expressed regarding science proficiency.

The post-K-12 era in the Philippines has been characterized by unfavorable National Achievement Test (NAT) results, consistently indicating suboptimal academic performance among Filipino students across the five core subject areas: Mathematics, English, Science, Filipino, and Araling Panlipunan. For instance, recent reported data frequently show that average scores in key subjects fall below the Department of Education's (DepEd) desired Mean Percentage Score (MPS), which typically registers below 75%. These persistent shortcomings necessitate a structured approach to bridge learning deficiencies. Behiga (2022) argues that a remediation program is essential to equip classroom teachers with the requisite knowledge, abilities, and attitudes to support slow or poor learners in reaching their full academic potential.

Remedial education, often termed developmental education, is designed to enable students to develop the foundational competence necessary in basic educational skills, such as literacy and numeracy. These initiatives align with the Department of Education's (DepEd) vision encapsulated in the "MATATAG: Bansang makabata, batang makabansa" mantra, which guides all reforms aimed at cultivating capable, employable, engaged, accountable, and patriotic citizens.

Remedial programs are a crucial strategy for connecting disparate knowledge points, overcoming learning difficulties, and bridging academic gaps. Effective remedial instruction is fundamentally learner-centered, focusing intently on the student's individual needs (Buncag, 2022). The specific purpose of remedial teaching involves the individualized instruction of students who are experiencing difficulty in particular subject areas (Buncag, 2022). Remedial programs are thus viewed as an integral component of the educational structure, designed to help students return to the required academic trajectory and serving as a rapidly expanding strategy to prevent the loss of academic ground (Jhamb and Kumari, 2020).

A core advantage of remedial teaching techniques is the establishment of a solid foundation for more in-depth learning of a subject (Jhamb and Kumari, 2020). As Alfiler (2021) posits, remedial teaching, which can be delivered individually or in groups, addresses academic shortcomings that may impede subsequent learning. The underlying principle of remedial education is the reteaching and reinforcement of previously taught fundamental skills to enhance student performance in current or future coursework, often characterized as filling "learning gaps." Teachers base their remediation efforts on student academic performance, utilizing targeted interventions and planned strategies to improve learning retention.

Science teachers, observing notably low student performance in their classes, have sought targeted interventions. Local baseline data, such as the Test of Grade 10 at Bagbaguin National High School, confirm this trend, showing that the student mastery

level on examinations has consistently fallen under the “low mastery” category across recent school years. The continuous academic underperformance evidenced by NAT, PISA, and local data demonstrates a clear justification for structured, targeted remedial programs.

In response, the researcher proposes Project SCoRE (Science Class Optimized for Remedial Education). This program is a remediation framework specifically designed for learners struggling with scientific concepts and principles who failed to master the learning competencies in quarterly exams. Project SCoRE aims to optimize science education by providing additional support and resources to help low achievers close comprehension gaps, build a strong foundation in science, and ultimately achieve academic success. The program focuses not only on the mastery of science concepts but also on improving students' overall learning abilities. These findings strongly support the necessity for structured treatments that bridge core learning gaps and enhance learner outcomes over time.

Project SCoRE is intended to equip students with the necessary skills for their subsequent academic journeys. Its scaffolding mechanisms are theoretically grounded in the Vygotskian framework, emphasizing learning as a collaborative process and specifically utilizing the concepts of the Zone of Proximal Development (ZPD), social learning, and the role of the More Knowledgeable Other (MKO). These tactics ensure that the program is responsive, supportive, and developmentally appropriate, facilitating students' progress towards academic independence.

Implementation began with pre-assessments to determine students' current levels of mastery. Instruction was then precisely targeted within the student's ZPD by presenting tasks that are slightly beyond their independent capability but achievable with assistance. During remediation, the teacher, acting as the MKO, delivered step-by-step instruction, models procedures, explained concepts, and progressively shifted responsibility to the student. Structured remedial sessions transitioned from teacher-led instruction to guided practice, culminating in independent activities once the student demonstrates readiness. Remediation encourages the verbal processing of concepts through pair or group work, guided discussions, and teacher-student conversations. Teachers utilized targeted questioning strategies to help students understand concepts and correct misconceptions. If effectively implemented, this structured program can serve as a major solution to the learning gap exacerbated by the pandemic, as well as address persistent concerns related to students-at-risk and academic retention. The study was undertaken to ensure that every learner is given the opportunity to master the essential skills of their subject, mitigating the impact of missed opportunities to fully grasp core learning competencies.

CHAPTER TWO

LITERATURE REVIEW

To establish a robust foundation for the current investigation, the researcher conducted a thorough and systematic analysis of relevant academic literature and scholarly papers. This comprehensive review was undertaken to achieve a deeper comprehension of the subject matter and to contextualize the present study within the existing body of knowledge.

➤ *Learning Gaps Exacerbated by the Pandemic*

The challenges posed by the COVID-19 pandemic necessitated a significant shift in educational delivery. In the Philippines, the school year 2020–2021 commenced on October 5, 2020, as stipulated in DepEd Order No. 030, s. 2020. This was implemented under the framework of DepEd Order No. 012, Series 2020, which established the Basic Education Learning Continuity Plan (BE-LCP). The BE-LCP was designed to ensure the provision of high-quality, equitable, and culturally relevant education while safeguarding the health and well-being of both teachers and students. Despite external support, the Department of Education (DepEd) continues to seek effective strategies to assist educators in ensuring all learners master the Most Essential Learning Competencies (MELCs) within the new educational landscape.

The primary consequence of this disruption is learning loss, defined by Yang (2022) as a deficiency in knowledge or skills resulting from interruptions or gaps in education. These deficiencies have been shown to impede students' ability to continue their studies and achieve a high degree of competency (Torres, 2021). Learning gaps are particularly pronounced when students advance to subsequent grade levels without having mastered requisite foundational skills. Since curricula are often structured sequentially from simple to complex, the lack of mastery in fundamental concepts prevents learners from attaining higher-level competencies, creating a significant discrepancy between their current understanding and expected proficiency (Torres, 2021). To successfully master the competencies outlined in the curriculum, these gaps must be addressed expeditiously (Torres, 2021).

➤ *Identifying and Addressing Learning Gaps*

The initial and critical step in intervention is the identification of nature, location, and specific struggling learners impacted by these gaps (Heater, 2020). Teachers must employ a range of diagnostic questions and assessments to pinpoint areas requiring improvement, which subsequently inform the necessary actions and tests for concept mastery. Only through this systematic process can learning gaps be effectively addressed.

Research has confirmed the prevalence of these deficits, particularly in specialized subjects. For instance, the study by Simbajon & Adlaon (2024) examined learning gaps and proficiency levels in science-specialized subjects, demonstrating that interventions such as the Mastery Learning Approach and the use of Learning Management Systems led to improvements in students' comprehension and knowledge. However, the authors underscore that further attention, and interventions are needed to enhance student mastery in certain areas. Simbajon & Adlaon (2024) also emphasize the critical role of effective teaching strategies and the potential influence of gender and diverse learning approaches on student achievement. This body of research provides valuable insights for educators, curriculum developers, and policymakers in designing instructional methods that address identified learning gaps, boost student outcomes, and improve the overall quality of science education.

➤ *The Concept and Principles of Remedial Education*

In response to instructional time lost during the pandemic, many schools are employing remedial education to revisit and revise previously taught material. Beyond merely addressing existing learning gaps, some institutions are focusing on acceleration strategies to prepare students for new learning (Aquino, 2021). The core objective of remedial instruction is to ensure that learners attain age- and class-appropriate learning competencies (Aquino, 2021). Additionally, it serves to guarantee the intended quality of learning by filling knowledge gaps and correcting persistent errors (Jhamb, Gunjan, & Kumari, Archana, 2020).

Remedial education, also referred to as developmental education, is fundamentally designed to help learners acquire the necessary proficiency in foundational academic areas such as literacy and numeracy. The approach requires starting instruction at the learner's current level of competence and building incrementally toward higher achievement, underscoring the necessity of a learner-centered teaching strategy that focuses on individual needs.

Effective implementation of remedial teaching classes requires careful consideration of students' capacity, needs, educational backgrounds, and experience levels. Instructional design should favor short, frequent lessons over prolonged sessions, the use of concrete concepts over abstract ones, and incorporate practice, drill, or review to enhance both understanding and retention of educational material. The effectiveness of remedial education is further maximized when teaching approaches are tailored to the students' learning styles (Gigante, 2024). Furthermore, Gigante (2024) highlights the importance of parental involvement in the planning of remedial teaching to secure their full cooperation and support.

➤ *Remedial Intervention in Science Education*

Science, a subject that inherently requires both cognitive and logical skills, is best enhanced through hands-on or real-life

learning. However, the worldwide pandemic that erupted in 2020 created a profound gap in the educational system globally. As cited by Aquino (2021), the specific purpose of remedial teaching is to cater to the requirements of students struggling to keep pace in a regular classroom setting. Remedial programs provide teachers with a valuable opportunity to concentrate on underachieving students and deliver instruction tailored to their current ability levels. The ultimate goal of such interventions is to accelerate development and mitigate the widening variation in student learning levels across grade levels.

Empirical evidence supports the positive impact of remedial classes. Rai and Penjor (2020) conducted an action research study involving students who scored below the benchmark on a class test. After attending a four-week remedial program, these students demonstrated higher post-test scores and reported increased satisfaction. Similarly, Saldana (2023) proposed Project BLOG in science, designed to provide remediation opportunities for academically underprepared students. The project focuses on assessing identified least learned competencies, bridging proficiency gaps, and preparing learners for the next grade level. Both teacher and student-respondents reported favorable perceptions of the BLOG Project as a remedial intervention in Junior High School (JHS) Science.

➤ *Learning Programs and Implementation Challenges*

The remedial program serves as a critical intervention for low-achieving students who are academically lagging. Rai and Penjor's (2020) study explicitly classified remedial classes as an educational intervention tailored to address the learning requirements of these students. Given the need for educational equity and social achievement, remediation is considered necessary in all school settings (Louge, 2022). Most programs aim to enhance students' basic literacy and numeracy skills, improve their capacity for further education, and strengthen their chances for future economic and social achievement. Consequently, schools, governments, and educational initiatives worldwide are integrating contextually appropriate remediation opportunities both within and outside the classroom. Guban and Revilla (2022) view the remedial program, in collaboration with the school and parents, as the essential foundation for students to continue their learning, catch up, and preempt academic challenges.

While learning programs represent a tangible solution to educational gaps, their implementation requires careful planning, rigorous study, and testing. Impulsive implementation risks compromising a learner's performance and wasting resources (Borges, 2021). Borges (2021) notes that determining the impact of learning programs remains a significant challenge for many organizations, particularly given the substantial investment of time, resources, and training required from both teachers and participating learners.

The persistent nature of the educational crisis is highlighted by the PISA 2022 findings, which revealed that the percentage of Filipino children scoring below the baseline level of competency in science, math, and reading "did not change considerably" compared to the 2018 results. Earlier analysis by Rojas (2019) attributed the poor performance in the 2018 PISA (worst in reading, second worst in math and science) to the failure of the K-12 curriculum to improve the quality of basic education. In December 2023, Education Undersecretary Michael Wesley Pore acknowledged the need for improvement: "We hope to see improvements in the learning recovery programs that we have in place... We'll have to wait and see what that means, but we're going to be as proactive as possible with the learning recovery program" (Pore, 2023, as cited in an article). This context underscores the vital need to address programmatic loopholes and thoroughly assess the capacity of interventions prior to nationwide implementation to ensure optimal results.

➤ *Effectiveness and Guiding Principles of Remediation*

Remedial programs offer numerous demonstrated benefits, providing children with the basic skills necessary for advancement to higher academic levels and reinforcing existing competencies. Furthermore, remedial classes help students with learning difficulties build neural connections and improve academic performance, particularly for those struggling with communication skills. Research suggests that these interventions can alleviate behavioral and motivational challenges often stemming from academic failure and dissatisfaction (Singua & Saldana, 2023). Education specialists and teachers widely regard remediation intervention programs and activities as an effective measure for ensuring learning among students, especially in core subjects like English, Science, and Math (Singua & Saldana, 2023).

One measure of success for developmental/remedial programs, according to K-12 Academics, is the rate at which enrolled students successfully complete the remedial courses. Numerous studies have found that underprepared students who complete remedial education achieve greater academic success than those who do not comply with remediation. Brown (2022) characterizes student remediation as a temporary increase in instructional time or specific academic support designed for students whose subject or skill proficiencies are below expected levels. Remedial programs take several forms, including those offering extra training before or after regular school hours, or "pull-out" programming during the school day. Pan (2020) examined the effectiveness of strategies supported by causal data, including prolonging the school year, extending the school day, increasing instructional time, various forms of tutoring or small group instruction, and "looping" techniques where students remain with the same teacher for multiple years. Efficient remedial programs are typically delivered by professional teachers with specialized expertise.

• *Louge (2022) Outlines four Guiding Principles for Achieving Successful Remediation:*

- ✓ Group students by ability rather than grade: This allows for the individualization of remedial education programs tailored to

students' specific areas of expertise and educational needs.

- ✓ Maintain small groups: Remediation is more effective when students receive individualized focus and the help they need to develop.
- ✓ Focus on specific skills: Successful remediation programs concentrate on targeted skills, requiring teachers to avoid simply re-teaching a concept in the same manner it was initially instructed.
- ✓ Promote motivation to learn: Remediation specialists can significantly contribute to student success by facilitating understanding of learning materials and inspiring them to improve, thereby counteracting the loss of interest often experienced by students who perpetually struggle with basic skills.

In the Philippine context, the study by Asio and Jimenez (2020) found a significant difference in student scores after a remediation intervention, concluding that remediation activities can positively affect academic performance. Likewise, Rai and Penjor (2020) confirmed that remedial classes improved the competency of low achievers. However, Gigante (2024) cautions that the repetitive nature of a Remedial Teaching Program can pose a challenge for both students and teachers.

➤ *Deficiencies and Contributing Factors in Philippine Science Education*

The persistent challenges in Philippine science education stem from a confluence of systemic and pedagogical issues. A study by Cabrales & Pacala (2023) identified five principal reasons contributing to the low quality of scientific education: (1) inadequate facilities for science instruction; (2) out-of-field teaching in science education; (3) detrimental student factors; (4) insufficient science instruction; and (5) poor comprehension of written language.

Science educators in the Philippines frequently cite the difficulty of teaching science effectively without adequate laboratory and computer equipment (Cabrales & Pacala, 2023). Although the nation allocates a considerable portion of its national budget to the Department of Education (DepEd), these funds have often proven insufficient to achieve necessary resource standards, such as a favorable student-to-computer ratio or the establishment of separate, well-equipped physics, chemistry, and biology laboratories in every school. As noted by UNESCO, while private institutions in the Philippines spend eight times more on education than the government, the government's expenditure on primary, secondary, and post-secondary education remains merely average compared to all countries surveyed under the World Education Indicators (WEI).

A significant problem for science teachers involves a lack of foundational background in all scientific disciplines required to teach the spiraling curriculum (e.g., biology, physics, chemistry, earth science) at increasing levels of detail and complexity. This deficiency often leads to out-of-field teaching, where instructors are assigned subjects outside their core specialization. While out-of-field teaching is widely acknowledged to hamper student achievement, current domestic literature lacks conclusive proof regarding the specific effect of the K-12 curriculum on the prevalence of this phenomenon.

Science teachers have observed that students lacking in scientific understanding frequently exhibit poor comprehension, low retention, disinterest, and slow reading skills. These student factors, including low reading comprehension and a lack of enthusiasm or basic knowledge, are highly concerning, given that the science classroom should function as a center for creativity and innovation.

Quantitative studies internationally suggest a decline in students' interest in science in recent years (Ramsurrun, Elaheebocus, & Chiniyah, 2024; Khan, Shiraz, Shah, & Muzamil, 2023). Conversely, research in other Philippine regions indicates that interest in science is intrinsically high among students (Oclaret, 2021; Enriquez, Alvarado, Apit, & Nituda, 2024). Nevertheless, when student interest wanes, their academic performance concurrently declines, leading to reduced classroom participation.

Students cannot be exclusively held responsible for low academic performance, as the teaching-learning process is a three-way paradigm involving the teacher, the student, and the school environment. Research has consistently explored the various factors influencing students' interest in science and their implications for teaching and curriculum development. Pacala (2021) found that integrating active learning practices can significantly enhance student engagement. Furthermore, Alhadabi (2021) emphasized that a student's interest in science is profoundly shaped by their classroom experiences, including the relevance of the topic, the teacher's enthusiasm, and the use of hands-on activities. When students perceive science as interesting and relevant to real-world situations, their intrinsic motivation naturally increases.

Moreover, Fortus and Touitou (2021) stress that the way science teachers are perceived by their students—both during their pre-service and in-service training—is a crucial influence on student motivation. Teachers are a vital component of the educational environment and, thus, critically impact student motivation. Previous research has identified a diverse range of factors affecting children's motivation to learn science, encompassing psychological, sociological, and cultural aspects, such as family conditions, parental participation, methods of learning, teaching approaches, and the school environment (Aquino, 2021). Age and gender also play a significant role, with Conel (2021) noting that students' interest in science tends to decrease as they get older, suggesting these variables are useful predictors of interest in science subjects.

Given the necessity of fostering curiosity in a knowledge-based subject like science, educators must actively generate new ideas and strategies to overcome student disinterest. Cabrales and Pacala (2023) identified improvising resources and self-educating

in other scientific specializations as common coping mechanisms utilized by science teachers. The improvisation of tools and resources is a clear indicator of innovation among science educators. It is paramount to employ a variety of instructional strategies in science teaching to foster an engaging environment that naturally cultivates student interest.

➤ *Synthesis*

The review of related literature established the dynamic nature and growing sophistication of remedial strategies in contemporary education. The documented improvements in intervention designs made the proposed execution of the Project SCoRE intervention within the classroom a compelling area of inquiry. Effective remediation, as consistently suggested across various studies, requires appropriate planning and diagnostic procedures to facilitate the collection of rich, meaningful data (Heater, 2020).

The literature strongly supported the notion that remediation is a critical mechanism for addressing student learning gaps (Torres, 2021; Louge, 2022). A consensus emerged from the cited studies regarding the definition and purpose of remedial education: it functioned as an essential intervention program designed to assess and enhance student performance, ultimately helping learners master the requisite skills and competencies for a given academic unit (Jhamb, Gunjan, & Kumari, Arhana, 2020; Buncag, 2022). Furthermore, multiple sources underscore the paramount importance of remediation in closing the academic divide created by learning deficits (Aquino, 2021).

The literature also emphasized the critical role of the educator, asserting that teachers must be fully equipped and knowledgeable to effectively address students' learning gaps (Behiga, 2022). This involves utilizing a wide variety of techniques in preparing diagnostic questions and instructional activities (Heater, 2020).

However, while the related studies confirmed the positive impact of remediation on academic performance, they utilized a diverse array of courses of study to demonstrate this effect (Rai and Penjor, 2020; Saldana, 2023).

Despite the general consensus on the necessity and effectiveness of remedial education, none of the aforementioned studies are exactly similar to the present investigation. Specifically, a research gap exists concerning the localized impact of a science-specific remedial program—Project SCoRE—on students' academic performance within the particular context of the researcher's setting. The current study was thus distinct in its focus on Science as the subject matter for implementing and evaluating the effects of the intervention. The primary objective of this research was to uncover and analyze the empirical data necessary to bridge this identified gap, thereby validating the underlying efficacy of Project SCoRE.

➤ *Theoretical Framework*

This study adopted Kolb's Model of Experiential Learning (ELM) as its theoretical framework to comprehensively analyze the function and impact of Project SCoRE as an intervention program for struggling Science students at Bagbaguin National High School.

• *Kolb's Model Posited that Effective Learning is a Cyclical Process Involving four Interconnected Stages:*

- ✓ Concrete Experience (CE): Directly engaging in a new experience.
- ✓ Reflective Observation (RO): Reflecting on the experience from various perspectives.
- ✓ Abstract Conceptualization (AC): Forming new ideas or modifying existing concepts based on reflection.
- ✓ Active Experimentation (AE): Testing the new concepts and applying the knowledge, which, in turn, leads to new concrete experiences.

The model fundamentally emphasized experiential learning and the process of assessing and integrating new knowledge with students' prior experiences.

This framework was highly relevant to the present investigation because the design and successful execution of Project SCoRE necessitated a thorough and deliberate progression through these phases. Specifically, the intervention's structure—which involved providing students with new, targeted learning experiences (CE), encouraging self-assessment and discussion (RO), facilitating the re-mastery of scientific principles (AC), and measuring competency through assessments (AE)—directly aligned with the ELM. The successful implementation of Project SCoRE, therefore, depends on the thorough consideration of learning objectives, instructional strategies, material selection, and evaluation procedures, all of which must be integrated into a functional learning cycle grounded in students' active engagement and reflection.

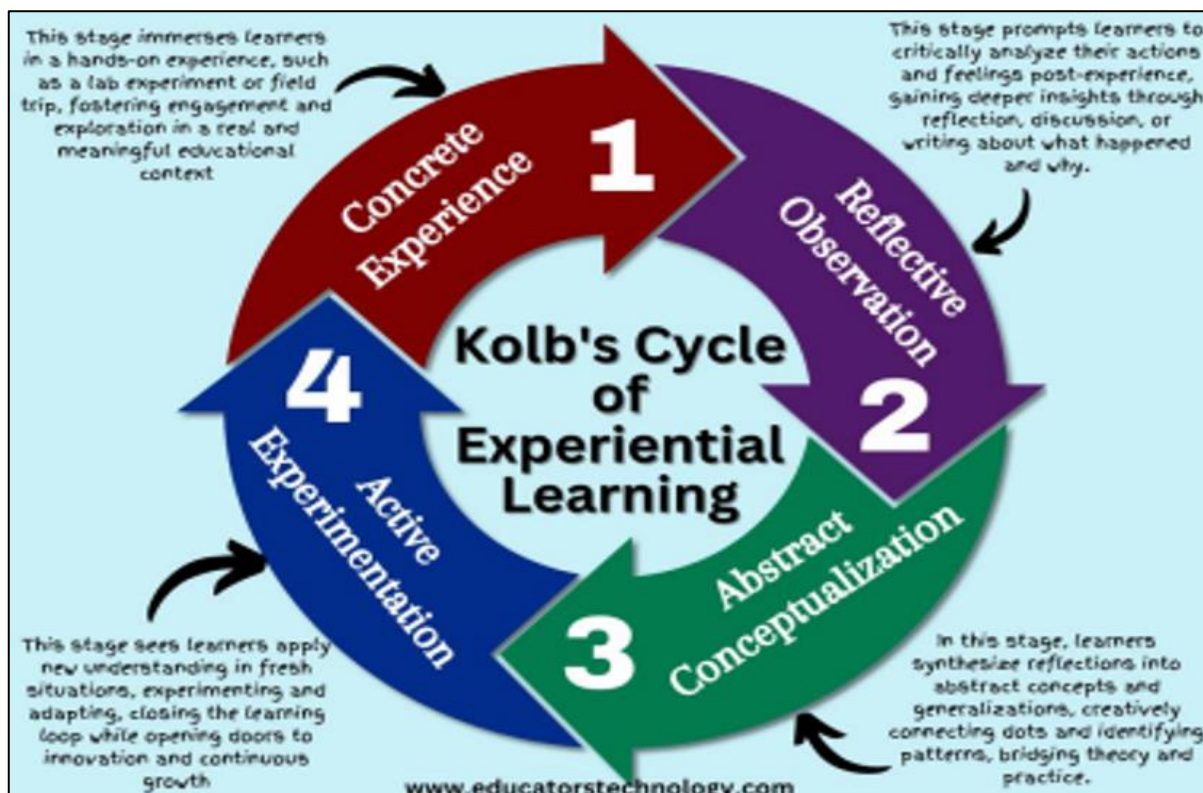


Fig 1 Kolb's Cycle of Experiential Learning

The implementation of Project SCoRE was systematically structured to align with the four sequential stages of Kolb's Experiential Learning Model (ELM), ensuring a comprehensive and student-centered approach to remediation.

The cycle began with the Concrete Experience (CE), where students are directly engaged in a specific task or hands-on activity, a participation Kolb deemed essential to the learning process. Prior to this engagement, students were encouraged to draft a learning contract, which, alongside shared expectations, was established at the beginning of Project SCoRE to clarify goals and commitment. This initial stage ensured learners were actively involved in the new scientific context.

The second stage involved Reflective Observation (RO). After participating in the concrete experience, the student stepped back to critically consider the task and the outcome. At this juncture, learners were encouraged to engage in discussions with peers and instructors, posing questions to process the experience. Proper and timely feedback was a crucial element of this stage, as it assists students in recognizing the value of their efforts and performance while providing actionable insights for improvement (Behiga, 2022).

The third phase was Abstract Conceptualization (AC), where students assimilate new ideas or modify existing abstract concepts to achieve better comprehension. The teacher facilitated this stage by introducing more interactive activities or targeted worksheets. To conceptualize the experience, students were prompted to link the new information to their prior knowledge and experiences, allowing for the construction of more robust mental models.

The final stage was Active Experimentation (AE), which served as the testing phase of the cycle. Students are tasked with applying the newly conceptualized knowledge, testing hypotheses, and applying concepts in new situations. This stage moved beyond rote learning, enabling students to evaluate data, identify trustworthy information sources, present their findings, and create relevant solutions.

This entire conceptual framework was vital to the present study as it provided a systematic blueprint for the design and execution of Project SCoRE. The instruction delivered throughout the program was designed to be one-on-one, flexible, and student-centered. Project SCoRE incorporated multiple independent activities corresponding to each step of Kolb's model.

In summary, the instructional strategies and tools utilized within Project SCoRE included: formative and remedial feedback, video recordings, analysis of examination results, learning contracts, self-directed learning modules, mentoring, and simulated interview scenarios.

The overarching goal of Project SCoRE was to provide students with a systematic and logical approach to remediation that

naturally followed Kolb's experiential cycle, thereby facilitating the acquisition of necessary scientific information and skills. By identifying the least acquired competencies and skills and ensuring readiness for grade-level transfer, Project SCoRE was specifically intended to fill the identified gaps in students' current scientific knowledge and proficiency (Saldana, 2023).

➤ *Research Paradigm*

The study employed the Experiential Remediation Model for Science Remediation (Project SCoRE), a customized research paradigm that served as the guiding structure for the investigation. This model was conceptualized and developed to systematically integrate Kolb's Experiential Learning Cycle with a structured Remedial Teaching Process (Kolb, 1984; Buncag, 2022).

The Project SCoRE model was specifically designed to address identified science learning gaps through feedback-driven, student-centered instruction. It provided the theoretical and methodological framework necessary to guide the design, implementation, and rigorous evaluation of Project SCoRE as a remedial intervention. The application of this paradigm focused on learners who had been identified with low mastery in specific, prerequisite science competencies, ensuring a targeted and systematic approach to academic recovery.

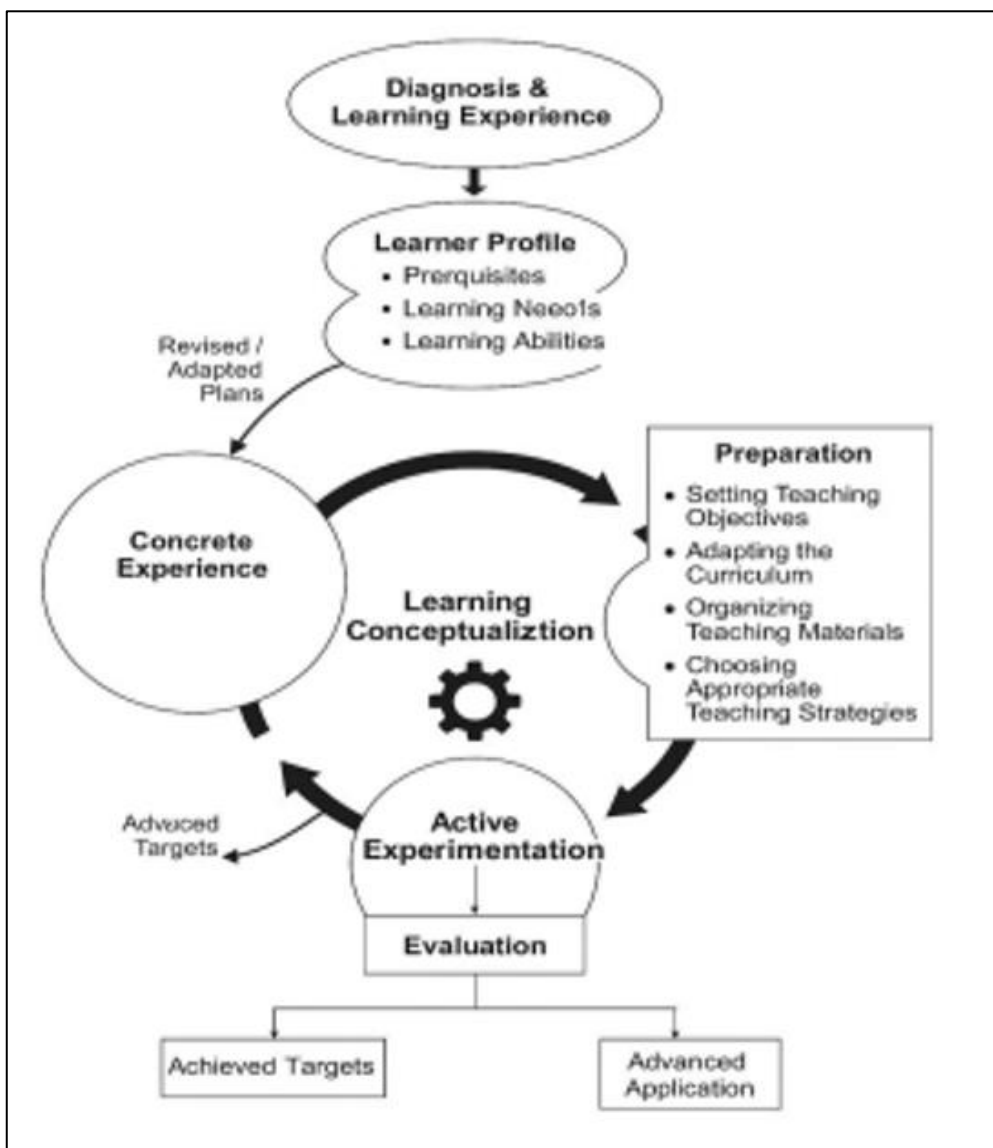


Fig 2 Project SCoRE (Science Class Optimize for Remedial Education)

The research paradigm commenced with the Diagnosis and Learning Experience phase, which directly correlated with Kolb's "Concrete Experience" stage. During this initial step, researchers administered diagnostic assessments, such as pretests, which were then supplemented by teacher observations and a meticulous analysis of classroom performance. This comprehensive process facilitated the generation of a learner profile (Kolb, 1984). The resulting profile incorporated an analysis of students' prerequisite knowledge, specific learning needs, preferred learning styles, interests, and cognitive abilities. Crucially, the data systematically collected from this phase subsequently informed the design of responsive and targeted remediation strategies.

Following the initial diagnosis, the process transitioned into the Preparation Phase. In this stage, the educator deliberated extensively on the identified learner needs and subsequently began to design customized learning interventions. This phase effectively integrated both Kolb's "Reflective Observation" and "Abstract Conceptualization" stages (Kolb, 1984). Instructional plans were meticulously created through setting specific teaching objectives, adapting the existing curriculum, organizing relevant instructional materials, and selecting appropriate pedagogical strategies. At this pivotal juncture, the teacher not only reflected on the observed learner gaps but also conceptualized precisely how to address them using structured and contextualized approaches, thereby mapping learning from theoretical frameworks into practical classroom application.

The subsequent Active Experimentation phase was implemented, wherein learners engaged actively with the designed remediation activities. These activities often comprised either individual or group-based instruction, utilizing varied tools and materials developed through Project SCoRE (e.g., digital tasks, strategy problems, moral dilemmas). This phase distinctly reflected Kolb's emphasis on learning through doing (Kolb, 1984), as students were afforded ample opportunities to apply re-taught concepts, experiment with newly acquired understandings, and interact with meaningful learning experiences. Upon the conclusion of the remediation sessions, learners proceeded to the Evaluation and Observation phase. Here, post-tests, teacher observations, and student reflections were utilized to rigorously assess whether the specified learning targets had been successfully achieved. Depending on the evaluated outcome, students either proceeded to more advanced applications or returned to a revised version of the remediation cycle. Those who met the required competencies advanced to higher-level learning, while those who continued to encounter learning obstacles underwent another round of remedial teaching—this time with strategies modified and refined based on their previous responses.

Ultimately, the Experiential Remediation Model emphasized personalized learning, experiential engagement, and continuous improvement. It actively encouraged students to participate in their own learning process while simultaneously enabling teachers to systematically adjust instruction based on real-time data and learner feedback. By effectively merging Kolb's cyclical model with the structured stages of remedial teaching, the paradigm ensured that learners not only recovered from identified academic deficiencies but also developed a deeper, more retained understanding through structured reflection, application, and necessary iteration (Kolb, 1984).

➤ *Statement of the Problem*

The main problem of the research was: How may the Project Score be described in improving the academic performance of grade 10 learners in Bagbaguin National High School?

• *This Study Specifically Aimed to Address the following Problems:*

- ✓ What is the level of academic performance of grade 10 learners in Life Science prior to the implementation of Project Score?
- ✓ What is the pretest performance of the respondents in Life Science before the implementation of Project Score?
- ✓ What is the posttest performance of the respondents in Life Science after the implementation of Project Score?
- ✓ Is there a significant difference between pretest and post-test performance in Life Science after the implementation of Project Score?
- ✓ What are the learning gains of the respondents in Life Science after the implementation of Project Score?

➤ *Hypothesis of the Study*

The null hypotheses of the study were tested at 0.05 level of significance.

- There was no significant difference between the pretest and post-test mean scores.
- There was no significant difference between the performance of the respondents after using the Project Score.

➤ *Significance of the Study*

The study was designed to rigorously determine the impact of Project SCoRE on the academic performance of Grade 10 low-achieving students in science at Bagbaguin National High School. The findings of this investigation provided substantial benefits to several key stakeholders, underscoring the broader significance of the research.

• *Learners*

The results were intended to directly benefit learners by facilitating an improvement in their academic performance through the structured assistance of Project SCoRE (DepEd, 2018). Furthermore, the intervention was designed to expedite their return to mainstream classrooms and promote the mastery of essential competencies within the science curriculum (UNESCO, 2015).

• *Teachers*

The study provided teachers with a systematic mechanism to more effectively monitor and evaluate their students' progress and performance. The findings also served to validate and encourage the revitalization of Project SCoRE within the schools, establishing it as a proven strategy for mitigating academic learning gaps, as well as addressing associated psychological and social concerns among students (Hattie, 2009).

• *Supervisors*

For Supervisors, the research offered substantive insights that could be leveraged to support teachers. Specifically, the findings provided a foundation for designing and conducting relevant training courses aimed at enhancing the effective implementation of Project SCoRE. This enabled Supervisors to assess and improve teachers' skills in utilizing diverse instructional strategies necessary for the successful delivery of the program (Fullan, 2016).

• *School Administrators*

The study served to inform School Administrators on effective ways to provide targeted instructional and logistical assistance to teachers. Administrators were able to utilize the research findings, and if the structured program was confirmed to be effective, they could formally consider incorporating its successful mechanisms into broader school-wide curriculum development initiatives (Guskey, 2000).

• *Future Researchers*

Finally, the study was deemed beneficial to future researchers interested in exploring other dimensions of academic remediation. The comprehensive data and conclusions provided a valuable benchmark against which subsequent parallel studies could compare their findings, thereby contributing to the continuous development and refinement of improved remedial programs and pedagogical practices (Borg & Gall, 1989).

➤ *Scope and Delimitation of the Study*

The investigation focused on evaluating the efficacy of Project SCoRE as an intervention for Grade 10 students at Bagbaguin National High School who had been previously identified as experiencing academic difficulties in science. Specifically, the study included students who attained a score of 24 or below on their quarterly examinations or had demonstrated consistently poor performance in the subject. This focused intervention aimed to enhance the academic performance of the participating learners, thereby contributing to the improvement of the Science department's and the school's overall outcomes in science education.

The study employed a heterogeneous group of Grade 10 students from the Life Science strand to ensure the acquisition of unbiased results regarding the intervention's impact. The implementation of Project SCoRE and the subsequent data gathering transpired during the entire third quarter of the Academic Year 2024-2025 at the aforementioned school, located in Bagbaguin, Valenzuela City. The specific Science topics addressed were limited to those covered during this period under the Most Essential Learning Competencies (MELCs) mandated by the Department of Education (DepEd), which included the Female and Male Reproductive Systems, Nervous System, Protein Synthesis, Mutation, Evidence of Evolution, Biodiversity, and Population Growth.

Project SCoRE strategies, which consisted of researcher-developed activities, were the primary intervention employed to improve the students' Science performance. The actual implementation of these strategies spanned the duration of the Third Grading Period, adhering to the standard fifty-minute time allotment for each Grade 10 Science meeting. The development and focus of these materials were directly informed by the low mastery levels identified in specific competencies, based on an item analysis conducted during the same academic year (2024-2025).

The following competencies, indicated in Table 1, exhibited "low mastery levels" based on the item analysis for School Year (S.Y.) 2024–2025:

Table 1 Most Essential Learning Competencies

Learning Competencies	Learning codes
Explain the role of hormones involved in the female and male reproductive systems	(S10LT-IIIb-34)
Describe the feedback mechanisms involved in regulating processes in the female reproductive system (e.g., menstrual cycle)	(S10LT-IIIc-35)
Explain how mutations may cause changes in the structure and function of a protein	(S10LT-IIIe-38)
Explain how fossil records, comparative anatomy, and genetic information provide evidence for evolution	(S10LT-III f-39)
Explain the occurrence of evolution	(S10LT-IIIg-40)

➤ *Definition of Terms*

The following terms have been defined to elucidate the study's purpose and ensure accurate interpretation of their use throughout the research:

- **Impact.** This refers to the degree of improvement in the student's mastery of life science as a result of using Project SCoRE.
- **Project SCoRE.** (Science Class Optimized for Remedial Education)- In this study, it is a remediation and intervention program for learners who are struggling with their understanding of scientific concepts and principles in Life Science.
- **Academic Performance.** In the study, this refers to the grades of the students in science in third quarters of SY: 2024-2025.
- **Life Science.** This is the main focus of the study. It refers to the Quarterly subject being taken by all Grade 10 students as prescribed by the Department of Education.

- Pretest. The test administered before the employment of Project SCoRE that measured students' academic performance in science 10.
- Posttest. The test will be administered after the implementation of Project SCoRE which measures students' academic performance in science 10. In the present study, post-test also served as the summative assessment.
- Low achievers. Those students who score below the passing score on the exam or in their performance in science.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter presented the research study's methodology and procedures, including the population and sample, research instruments, data collection and processing, and the statistical analysis and interpretation of the collected data.

➤ *Research Design*

This study utilized a quasi-experimental design, specifically the pretest-posttest experimental group design. A single-group setup was used because every student required remediation through Project SCoRE based on their performance. According to Bobbitt (2020), the pretest-posttest design is an experimental design in which participants are measured before and after participating in a treatment. Pretest-posttest designs can be employed in experimental and quasi-experimental research, with or without control groups. However, this design has significant limitations that can compromise the validity of the results due to external factors that may occur between the pre- and post-measurements.

➤ *Population and Sample of the Study*

Obtaining accurate data was a necessity in this statistical investigation. Therefore, knowing the appropriate sources and techniques for data collection was essential to guarantee its accuracy. In testing the effectiveness of Project SCoRE in Science, the population of this study was the Grade 10 learners of Bagbaguin National High School for the School Year 2024–2025.

The researcher employed a purposive sampling technique. Purposive sampling, as defined by Nikolopoulou (December 2022), is a class of non-probability sampling procedures in which units are chosen based on the possession of attributes required in the sample. Simply put, purposive sampling involves the "on purpose" selection of units. This sampling method, also called judgmental sampling, depended on the researcher's judgment in identifying and selecting the subjects, situations, or events that would provide the greatest amount of information required to fulfill the study's objectives.

➤ *Research Instrument*

To guarantee that the pretest utilized in this study effectively assessed the desired learning competencies and yielded consistent findings, instrument validation and reliability testing were conducted.

- *Questionnaire*

The researcher-made test served as the pretest and posttest instrument that was used in gathering data for this study. It was a 50-item multiple-choice-type examination, all of which were based on the learning competencies of the K–12 Curriculum for Science. These encompassed lessons such as the Female and Male Reproductive Systems, Nervous System, Protein Synthesis, Mutation, Evidence of Evolution, Biodiversity, and Population Growth. The table of specifications for this study was established based on the budget of work covered by the experimentation period in the K–12 Curriculum. This was done to ensure an equal distribution of items according to different levels of higher order thinking skills.

- *Validity*

The pretest was validated by a group of subject matter experts, which included experienced educators and curriculum creators. Each test item was examined to ensure that it aligned with the curricular standards and learning competencies targeted by the remediation program. Validators evaluated each item's relevancy, clarity, and difficulty level. Items that were confusing or misaligned were changed or eliminated.

- *Pilot Testing*

Following validation, the pretest was administered to a sample group of students (not from the actual study population) with similar demographic and academic profiles. The objective of the pilot test was to evaluate item functionality and identify any potential difficulties with exam administration and comprehension.

- *Reliability Analysis*

Cronbach's Alpha was calculated using the pilot test responses to determine the pretest's internal consistency. The reliability was calculated using the Siegel-Reliability Calculator. The resulting Cronbach's Alpha value of $\alpha = 0.743254$ indicated good reliability, implying that the test items accurately assessed student comprehension of the relevant abilities and concepts.

The validation and reliability testing procedures revealed that the pretest was a valid and reliable tool for determining baseline mastery levels. These findings increased confidence that the pretest data accurately reflected students' academic standing before the implementation of the Project SCoRE.

- *Administration*

The pretest was administered one week before the start of the remedial program. The students were given one hour to answer the pretest. Subsequently, the pretest was collected, checked, and tabulated to determine the mean, least mastered, and most mastered

skills, and other important data.

The experimentation period followed the pretest and ran for eight weeks. Upon the conclusion of the study's implementation, the posttest was given to the students, with one hour allotted for completion. Similar to the pretest, the posttest was checked and tabulated to obtain the necessary data. The eight-week interval was established to guarantee that: (1) Students received appropriate exposure to the target learning competencies. (2) Instructional strategies had sufficient time to produce measurable outcomes. (3) The results would accurately demonstrate Project SCoRE's impact, rather than short-term recall or incidental learning.

➤ *Data Gathering Procedure*

The research process began with the researcher submitting a formal letter to the School Division Superintendent. Subsequently, permission was sought from the Division of Valenzuela and the school head of Bagbaguin National High School through a formal request to conduct the study. Upon receiving approval, a waiver was provided to each student participant to ensure awareness and obtain the approval of their parents.

After completing the preliminary preparations, an orientation was conducted by the researcher for the participants. A pretest was administered before the implementation of the proposed intervention. Following the completion of the eight-week intervention, the posttest was administered.

Finally, after gathering all the necessary data, the pretest and posttest results were checked, verified, analyzed, and interpreted to determine if there were significant improvements in the academic performance of the students using Project SCoRE.

➤ *Ethical Considerations*

In conducting this research, it was critical to maintain unbiased, ethical, courteous, and genuine behavior toward participants. Students were assured of anonymity; a letter of confidentiality was given to protect their identity, and a letter of consent was presented to their parents, allowing their child to participate in the study. The researcher ensured that the letters and questionnaires used to collect data were valid and reliable.

All written and recorded data obtained for this study were securely stored at the researcher's school institution in a lock box that only she could access. Furthermore, full disclosure of all possible risks to the participants was provided within the letter of the consent form. Each participant was expected to complete the entire process of the research study upon their participation.

➤ *Data Analysis*

To ensure accurate and meaningful interpretation of the research findings, appropriate statistical techniques were applied based on the type and purpose of each research question. Both descriptive and inferential statistics were utilized to analyze the data, with support from JASP, free and intuitive statistical software that enabled efficient and reliable analysis. Each analysis was conducted according to a specific statement of the problem to maintain clarity, coherence, and relevance to the objectives of the study:

- To address the first statement of the problem, which aimed to describe the academic performance of Grade 10 learners in Life Science before the intervention, descriptive statistics were employed. Learners' previous grades in Life Science were collected and summarized using frequency, percentage, mean, median, mode, range, and standard deviation. These scores were then categorized according to the Department of Education's (DepEd) official grading descriptors to determine the general performance level of the class before implementing Project SCoRE.

Table 2 Department of Education's Descriptors & Grading Scale

Range	Description
90 -100	Outstanding
85 -89	Very Satisfactory
80-84	Satisfactory
75-79	Fairly Satisfactory
74 and below	Did Not Meet Expectations

- To address the second statement of the problem, which sought to determine the level of performance in the pretest before the intervention, descriptive statistical techniques were again applied. The distribution of pretest scores was analyzed using frequency and percentage to classify learners into performance bands. Furthermore, measures of central tendency and variability were computed to provide insight into overall academic readiness. Additionally, pretest results were disaggregated by the Most Essential Learning Competencies (MELCs) to identify specific areas of strength and difficulty before the intervention.
- The third statement of the problem focused on learners' performance in the posttest after the intervention. Descriptive statistics were utilized to summarize posttest results, with scores grouped into performance categories to track shifts in achievement. To further understand areas of improvement, posttest data were also analyzed per MELC, allowing for a detailed comparison between pre-intervention and post-intervention performance in each learning competency.

Table 3 Mastery Level

Mastery/ Achievement Level	
MPS	DESCRIPTIVE EQUIVALENT
96-100%	Mastered
86-95%	Closely Approximating Mastery
66-85%	Moving Towards Mastery
35-65%	Average
15-34%	Low
5-14%	Very Low
0-4%	Absolutely No Mastery

- To determine whether there was a significant difference between pretest and posttest scores, as posed in the fourth statement of the problem, inferential statistics were conducted using JASP. The Shapiro-Wilk test was first employed to assess the normality of score distributions. Due to several MELCs yielding non-normal results, the Wilcoxon signed-rank test was chosen as the appropriate non-parametric alternative. This test compared paired pretest and posttest scores to determine whether the improvements were statistically significant. The analysis was performed both per MELC and for the total test score.
- Finally, to address the fifth statement of the problem, which explored the learning gains of learners after the intervention, each student's learning gain was calculated using a specific formula. This involved subtracting the pretest score from the posttest score, dividing the result by the difference between the highest possible score (50) and the pretest score, and multiplying by 100 to obtain a percentage. This approach considered each learner's starting point and reflected the proportion of possible improvement achieved. Learning gains were then categorized as low, average, or high to interpret and evaluate the effectiveness of the intervention better.

CHAPTER FOUR RESULT AND DISCUSSION

➤ *Data Analysis, Interpretation, and Presentation*

This chapter outlined the findings derived from data collected before and after the implementation of Project Score. The results were structured to address specific research questions, focusing primarily on the academic performance of Grade 10 students in Life Science.

The analysis initially reviewed students' performance prior to the intervention using academic records and pretest results. This was followed by a summary of posttest scores, a comparative analysis of pretest and posttest performance to determine statistical significance, and an assessment of participants' learning gains.

Descriptive statistics illustrated performance levels, while inferential tests identified significant improvements. Supporting tables and narrative explanations were utilized to tie results back to the study's objectives.

➤ *Academic Performance Before the Implementation of Project Score*

Before the introduction of Project Score, the academic performance of Grade 10 students in Life Science was evaluated using their past grades as a baseline. These scores were classified according to the Department of Education’s (DepEd) official grading criteria. Frequency and percentage distributions were used to illustrate student placement across performance categories, while mean and standard deviation assessed the overall academic standing and variation.

Table 4 Frequency Distribution of Academic Grades in Life Science Based on DepEd Grade Descriptors (n = 30)

Grade Range	Descriptor	Frequency	Percentage (%)
90–100	Outstanding	0	0.00%
85–89	Very Satisfactory	0	0.00%
80–84	Satisfactory	3	10.00%
75–79	Fairly Satisfactory	25	83.33%
Below 75	Did Not Meet Expectations	2	6.67%
Total		30	100%

The data revealed that the vast majority of learners (83.33%) performed at a “Fairly Satisfactory” level. Only a small percentage (10%) reached the “Satisfactory” range, while 6.67% failed to meet expectations. The mean score of 76.03 indicated that overall performance was just above the minimum passing mark, and the mode of 75 highlighted that the most common grade was the lowest possible passing score.

Furthermore, the low standard deviation of 2.02 suggested that grades were closely grouped at a modest level. These findings underscored a critical learning gap in Life Science. As Heater (2020) noted, identifying where and what these gaps are is the first step in intervention. Consequently, these results supported the introduction of Project Score to enhance understanding and retention.

➤ *Pretest Performance Before the Implementation of Project Score*

A pretest was conducted to assess foundational understanding of Life Science concepts and establish a baseline for the participants’ initial knowledge. The scores were categorized according to the Most Essential Learning Competencies (MELCs) to identify specific areas of struggle.

Table 5 Frequency Distribution and Description of Pretest Scores

Score Range	Description	Frequency	Percentage (%)
1–10	Very Low	3	10.00%
11–20	Low	25	83.33%
21–30	Developing	2	6.67%
31–40	Proficient	0	0.00%
41–50	Advanced	0	0.00%
Total		30	100%

The distribution showed that 83.33% of learners fell into the "Low" performance category, indicating limited recall of concepts. None of the students attained "Proficient" or "Advanced" levels. With an average score of 14.40, the data reflected poor academic preparedness. To gain deeper insights, the results were analyzed by specific MELCs.

Table 6 Pretest Performance Per Learning Competency in Life Sciences

MELC Code & Learning Competency	HPS	Mean (M)	SD	% Mean	Mastery Level
S10LT-IIIb-34: Hormones in reproductive systems	7	2.13	1.04	30.43%	Low Mastery

S10LT-IIIc-35: Menstrual cycle feedback	7	2.23	0.82	31.86%	Low Mastery
S10LT-IIIc-36: Homeostasis regulation	7	2.37	1.16	33.86%	Low Mastery
S10LT-III d-37: Protein synthesis	4	1.23	0.97	30.75%	Low Mastery
S10LT-IIIe-38: Mutations	4	1.1	0.92	27.50%	Low Mastery
S10LT-III f-39: Evidence for evolution	7	1.87	1.11	26.71%	Low Mastery
S10LT-III g-40: Occurrence of evolution	7	1.83	0.99	26.14%	Low Mastery
S10LT-III h-41: Species diversity/survival	7	1.77	1.33	25.29%	Low Mastery
Total	50	14.23	3.63	28.46%	Low Mastery

The pretest results confirmed a lack of foundational comprehension, with the class achieving a mean percentage of 28.46%, well below the mastery threshold. The most significant challenges were found in molecular biology and evolutionary topics, where mean percentages ranged from only 25% to 27%. These gaps highlighted the necessity of a structured, contextualized intervention like Project Score.

➤ *Posttest Performance After the Implementation of Project Score*

Following the intervention, a posttest was administered using the same rigorous analysis to evaluate learning outcomes.

Table 7 Frequency Distribution and Description of Posttest Scores

Score Range	Description	Frequency	Percentage (%)
1–10	Very Low	0	0.00%
11–20	Low	0	0.00%
21–30	Developing	8	26.67%
31–40	Proficient	20	66.67%
41–50	Advanced	2	6.67%
Total		30	100%

Posttest results indicated a significant enhancement in performance. A total of 66.67% of students moved into the "Proficient" range, and no students remained in the "Very Low" or "Low" categories. The mean score rose substantially to 32.03.

Table 8 Posttest Performance per Learning Competency in Life Science

MELC Code & Learning Competency	HPS	Mean (M)	SD	% Mean	Mastery Level
S10LT-III b-34: Hormones	7	5.43	1.36	77.57%	Moving Towards Mastery
S10LT-III c-35: Menstrual cycle	7	4.23	0.73	60.43%	Average Mastery
S10LT-III c-36: Homeostasis	7	4.6	0.97	65.71%	Average Mastery
S10LT-III d-37: Protein synthesis	4	2.7	0.65	67.50%	Moving Towards Mastery
S10LT-III e-38: Mutations	4	2.67	0.71	66.75%	Moving Towards Mastery
S10LT-III f-39: Evidence for evolution	7	4.27	1.08	61.00%	Average Mastery
S10LT-III g-40: Evolution process	7	3.97	0.89	56.71%	Average Mastery
S10LT-III h-41: Species diversity	7	4.97	1.4	71.00%	Moving Towards Mastery
Total	50	32.83	4.25	65.66%	Average Mastery

Every MELC achieved a score above 50%. Notably, molecular biology topics—previously the weakest—showed considerable gains, with protein synthesis reaching a 67.50% mastery level. These improvements validated the instructional methods of Project Score and aligned with findings by Jhamb and Kumari (2020) regarding the importance of remedial teaching.

➤ *Difference Between Pretest and Posttest Performance*

To evaluate the effectiveness of the intervention, the Wilcoxon signed rank test was applied. All p-values were below .001, confirming that improvements were statistically significant.

Table 9 Pretest and Posttest Performance per MELC with Statistical Decision

MELC	Pretest Mean (SD)	Posttest Mean (SD)	P-value	Decision	Cohen's d
S10LT-III b-34	2.13 (1.04)	5.43 (1.36)	< .001	Reject HO	2.7 (Large)
S10LT-III c-35	2.23 (0.82)	4.23 (0.73)	< .001	Reject HO	2.57 (Large)
S10LT-III d-37	1.23 (0.97)	2.70 (0.65)	< .001	Reject HO	1.75 (Large)
S10LT-III h-41	1.77 (1.33)	4.97 (1.40)	< .001	Reject HO	2.46 (Large)
Total	14.23 (3.63)	32.83 (4.25)	< .001	Reject HO	4.82 (Large)

The overall effect size of 4.82 placed the intervention in the "Large" category. These enhancements were interpreted through Kolb's Experiential Learning Theory, suggesting that Project Score supported a cyclical learning process of experience, observation,

conceptualization, and experimentation.

➤ *Learning Gains of the Respondents*

Learning gains were calculated using Hake's classification to determine individual improvement.

Table 10 Learning Gain and Interpretation per Students (Selection)

Gain Level	Frequency/ Example	Pretest	Posttest	Learning Gain (%)
Low Gain	6 students	(e.g.) 15	26	22.00%
Medium Gain	24 students	(e.g.) 13	35	59.46%

The average learning improvement was 51.01%, categorized as a “medium gain”. While 80% of students achieved moderate gains, 20% recorded lower gains, indicating a need for more tailored support for some learners. Qualitative testimonies supported these findings, with students reporting that the remedial classes helped them understand difficult ideas like the feedback system and biodiversity.

The instructional intervention demonstrated clear effectiveness, evidenced by the substantial rise in the average score from 14.90 on the pretest to 32.43 on the posttest. This corresponded to an average learning improvement of 51.01%, which was categorized as a “medium gain” based on Hake's normalized gain scale. These results indicated that the majority of students derived considerable academic benefits from the teaching methodologies applied through Project Score.

The assessment of individual learning improvements revealed diverse levels of performance enhancement following the intervention. Among the 30 learners evaluated, 24 students (80.00%) demonstrated moderate learning gains, signifying that the majority achieved substantial progress from their respective baseline performances. These students experienced gains ranging from 30% to 69%, which indicated that the intervention effectively supported them in bridging learning gaps and improving their conceptual grasp of Life Science. Conversely, six students (20.00%) recorded low learning gains, with percentages falling below the 30% threshold.

While these learners still exhibited improvement, they likely faced more significant challenges in comprehending the content and may have required more tailored, individualized support. Notably, no student achieved the “high gain” category ($\geq 70\%$), suggesting that while the intervention was predominantly effective, opportunities remained to refine the instructional approach to assist those striving for high-level mastery. Overall, the class average gain of 51.01% indicated that, generally, students managed to achieve more than half of the potential improvement relative to their initial knowledge levels. Consequently, the data suggested that remediation interventions were capable of effectively improving academic performance.

➤ *Factors Influencing Academic Performance and Theoretical Alignment*

Despite the positive outcomes, this study identified several localized limitations and challenges that influenced student performance. Common factors included difficulties in understanding the medium of instruction, unfamiliarity with complex scientific terminology, varying individual learning paces, and external distractions such as excessive time spent on social media and peer influence. Other identified barriers included a lack of concentration, poor time management, and the demotivating effect of early failures on class tests. These insights not only validated the intervention's role in fostering academic advancement but also underlined the necessity for continued, multifaceted support for learners who exhibited lower gains.

The observed learning gains were found to be consistent with Kolb's Experiential Learning Theory, implying that the structure of Project Score effectively fostered deep, cyclical learning. By engaging students at each level of Kolb's model—Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation—the intervention filled knowledge gaps and enhanced the students' capacity to think critically and apply concepts independently. This theoretical alignment was further evidenced by the statistically significant improvement in posttest scores.

These findings were further corroborated by external research. Pacala (2021) noted that integrating active learning practices into the classroom significantly enhanced student outcomes. Furthermore, Alhadabi (2021) found that student interest in science was strongly influenced by classroom experiences, including the relevance of the topic, the teacher's enthusiasm, and the utilization of hands-on activities. When students perceived science as relevant to real-world situations, their intrinsic motivation increased. Additionally, Simbajon and Adlaon (2024) examined learning gaps in specialized science subjects and concluded that interventions such as the Mastery Learning Approach and Learning Management Systems improved students' comprehension, though they emphasized that specific areas still required targeted mastery interventions.

➤ *Qualitative Analysis of Student Testimonies and Classroom Observations*

To gain deeper insights into the impact of Project Score, the researcher gathered student testimonies to highlight personal experiences. These responses were classified into two primary categories: learning development and engagement. Regarding conceptual comprehension, one student noted, “The science remedial classes helped me understand ideas that I struggled with in regular classrooms, particularly the feedback system; smaller groups made it easier to ask questions.” Another participant shared

that Project Score “assisted me in learning swiftly and effortlessly... not only did it help me understand the concepts better, but it also benefited others, and my grades improved further.” A third student emphasized the value of personalized instruction: “I enjoyed the one-on-one support. The teacher was patient, and I was eventually able to understand concepts like biodiversity and evolution.”

In terms of engagement, students reacted positively to the gamified aspects of the intervention, with one respondent stating, “I enjoy doing it in class, especially when it is presented as a game.” These testimonies demonstrated that Project Score not only improved cognitive understanding but also promoted a cheerful and engaged learning environment. These qualitative findings were complemented by teacher reflections and classroom observations (Appendix I), which identified real-time modifications and specific instances of high student engagement. The most beneficial activities identified by the students included the creation of concept maps for every topic.

➤ *Institutional Challenges and Sustainability*

The study also contextualized these findings within the broader educational landscape. Chi (2023) highlighted that the PISA 2022 results captured a drastic, unprecedented decline in student performance globally due to the COVID-19 pandemic—a trend mirrored in Philippine schools. While the implementation of Project Score offered various benefits, several institutional drawbacks were identified. Many schools faced funding, material, and staffing constraints that limited the successful implementation of such interventions. For the program to achieve its desired outcomes, school administrators were required to provide simplified modules, worksheets, and visual aids, while also undertaking the additional task of monitoring teachers during implementation. Furthermore, the intervention necessitated regular communication between parents and the school.

Resistance from students also presented a challenge, as some viewed the intervention as remedial or stigmatizing, which could impede participation. However, the study revealed that Project Score provided students with the necessary skills for the next phase of their educational journey. To ensure the long-term success and institutionalization of Project Score, the following four sustainability options were proposed:

- **Curricular Alignment:** Align the program with curriculum goals and current intervention frameworks to minimize redundancy and provide professional development workshops for teachers.
- **Budgetary Allocation:** Allocate a specific portion of the annual school budget for materials, evaluation tools, and potential facilitator stipends.
- **Data-Driven Evaluation:** Utilize data from regular evaluations to improve program effectiveness and demonstrate its value to stakeholders.
- **Stakeholder Accountability:** Involve administrators, teachers, and parents in program development and feedback to foster shared accountability.

Through these efforts, Project Score was envisioned as an essential, self-sustaining component of the school's educational system, continuing to serve students long after the formal research period concluded.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

➤ *Summary of Findings, Conclusions, and Recommendations*

This chapter presented a comprehensive synthesis of the research findings, the conclusions derived from the data analysis, and the resulting recommendations for the enhancement of academic performance in Life Science. The study was conducted to evaluate the efficacy of Project SCoRE among Grade 10 students at Bagbaguin National High School during the 2024-2025 academic year. By utilizing a quasi-experimental pretest-posttest design, the researcher aimed to determine the impact of this remediation program on student mastery of the Most Essential Learning Competencies (MELCs).

• *Summary of Findings*

The data analysis yielded several critical insights regarding the students' academic standing both before and after the pedagogical intervention.

- ✓ **Baseline Academic Performance:** Before the intervention, the academic performance of Grade 10 learners in the third grading period was predominantly situated within the “Fairly Satisfactory” category. The majority of students recorded grades between 75 and 79, with only a marginal few achieving a “Satisfactory” rating or failing to meet expectations.
- ✓ **Initial Mastery Levels (Pretest Results):** The pretest results reflected generally poor academic performance and varying levels of student preparedness. Scores were heavily concentrated in the lower ranges, indicating that students had yet to build a solid foundation in essential Life Science skills. Furthermore, the class fell significantly below the expected competency levels across the eight MELCs before the rollout of Project SCoRE.
- ✓ **Post-Intervention Outcomes (Posttest Results):** Following the implementation of Project SCoRE, the posttest results indicated a significant enhancement in student performance. The data showed that students shifted into the “Proficient” and “Advanced” levels, demonstrating a marked improvement in their mastery of Life Science skills. Only a small minority remained at the “Developing” level, while the “Very Low” and “Low” categories were entirely eliminated.
- ✓ **Statistical Significance of Improvements:** The statistical analysis confirmed that the increases in posttest scores were significant and consistent across all assessed competencies. This underscored the high effectiveness of Project SCoRE in boosting performance, particularly in challenging areas such as molecular biology and evolution.
- ✓ **Learning Gains:** The assessment of individual learning gains revealed that 80% of the respondents demonstrated moderate improvements. These gains signified that the intervention effectively supported students in bridging existing knowledge gaps and enhancing their conceptual grasp of the subject matter.

• *Conclusions*

Based on the findings enumerated above, the following conclusions were formulated:

- ✓ A significant majority of students initially performed at a marginal level, with third-quarter grades falling largely within the “Fairly Satisfactory” range.
- ✓ The initial low pretest scores were attributed to several factors, including a lack of prior knowledge, limited student engagement, and varying paces of learning. These circumstances necessitated the implementation of Project 2SCoRE intervention.
- ✓ The intervention proved successful in raising the overall academic performance of students in Life Science.
- ✓ The efficacy of Project SCoRE was statistically validated, as a significant difference was observed between the pretest and posttest scores.
- ✓ Students demonstrated specifically improved mastery in complex topics, including feedback mechanisms of the reproductive system, the nervous system, protein synthesis, and evolution.

• *Recommendations*

In light of the findings and conclusions derived from this study, the following recommendations are offered to optimize science education and ensure the sustainability of student academic gains:

- ✓ **Intensified Remediation for Abstract Concepts:** While Project SCoRE demonstrated broad gains, abstract competencies such as protein synthesis, mutation, and evolution recorded lower posttest means compared to other topics. Future iterations of the program should utilize more visual, contextual, and interactive strategies to close these residual learning gaps.
- ✓ **Consistent Classroom Integration:** Teachers are encouraged to employ a thorough and in-depth application of Project SCoRE within the regular classroom setting to further enhance student outcomes.
- ✓ **Regular Feedback Loops:** Educators need to conduct frequent evaluations and gather student feedback regarding the intervention to accurately determine the current state of learning and adjust instruction accordingly.
- ✓ **Interdisciplinary Application:** Project SCoRE may serve as a valuable reference for future studies and could be utilized by educators across various disciplines, not limited solely to the sciences.
- ✓ **Expansion of Research Scope:** Future researchers should consider conducting similar studies involving larger participant groups across all grade levels and multiple school quarters to further strengthen and generalize the findings of this study.

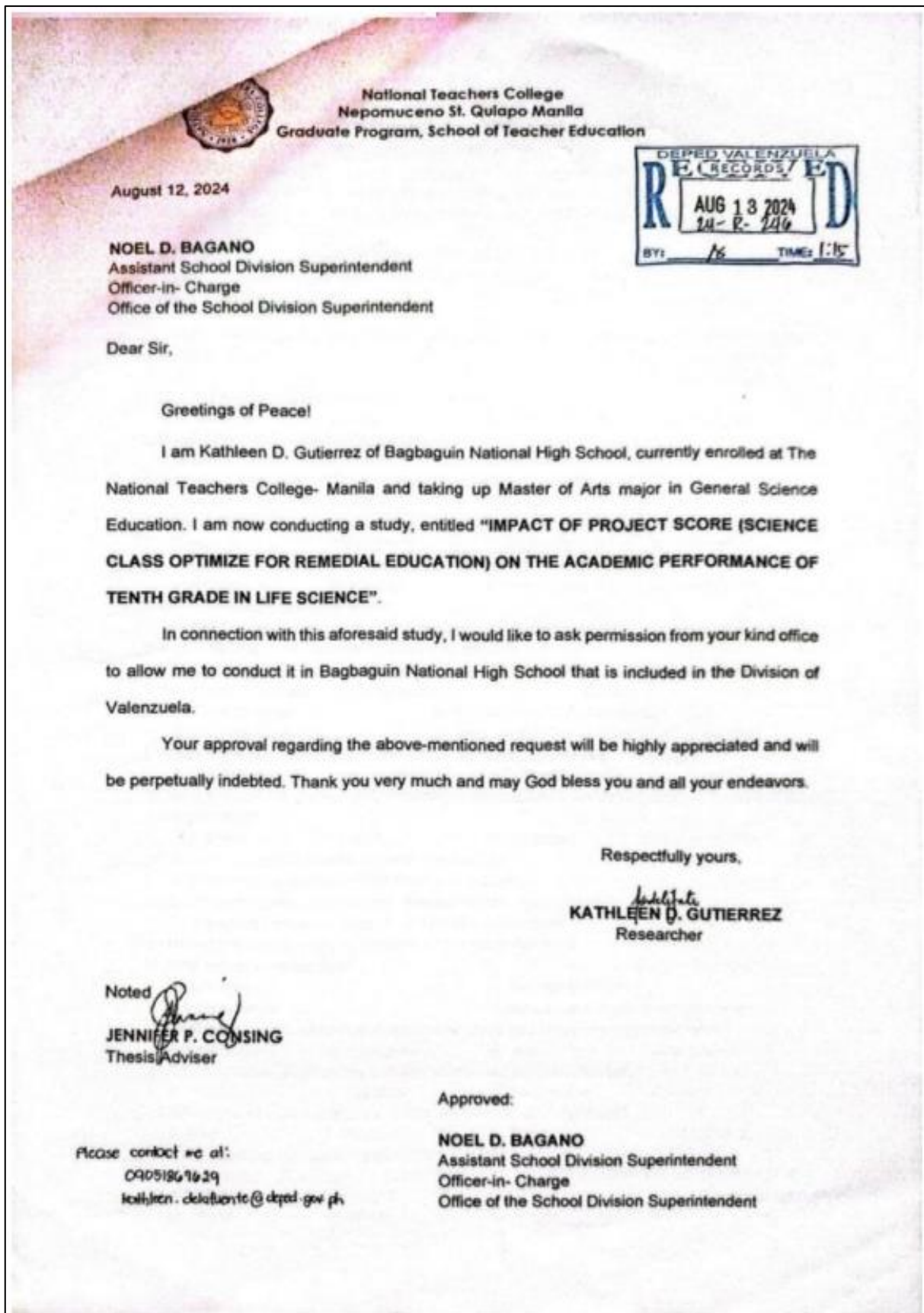
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APPENDICES

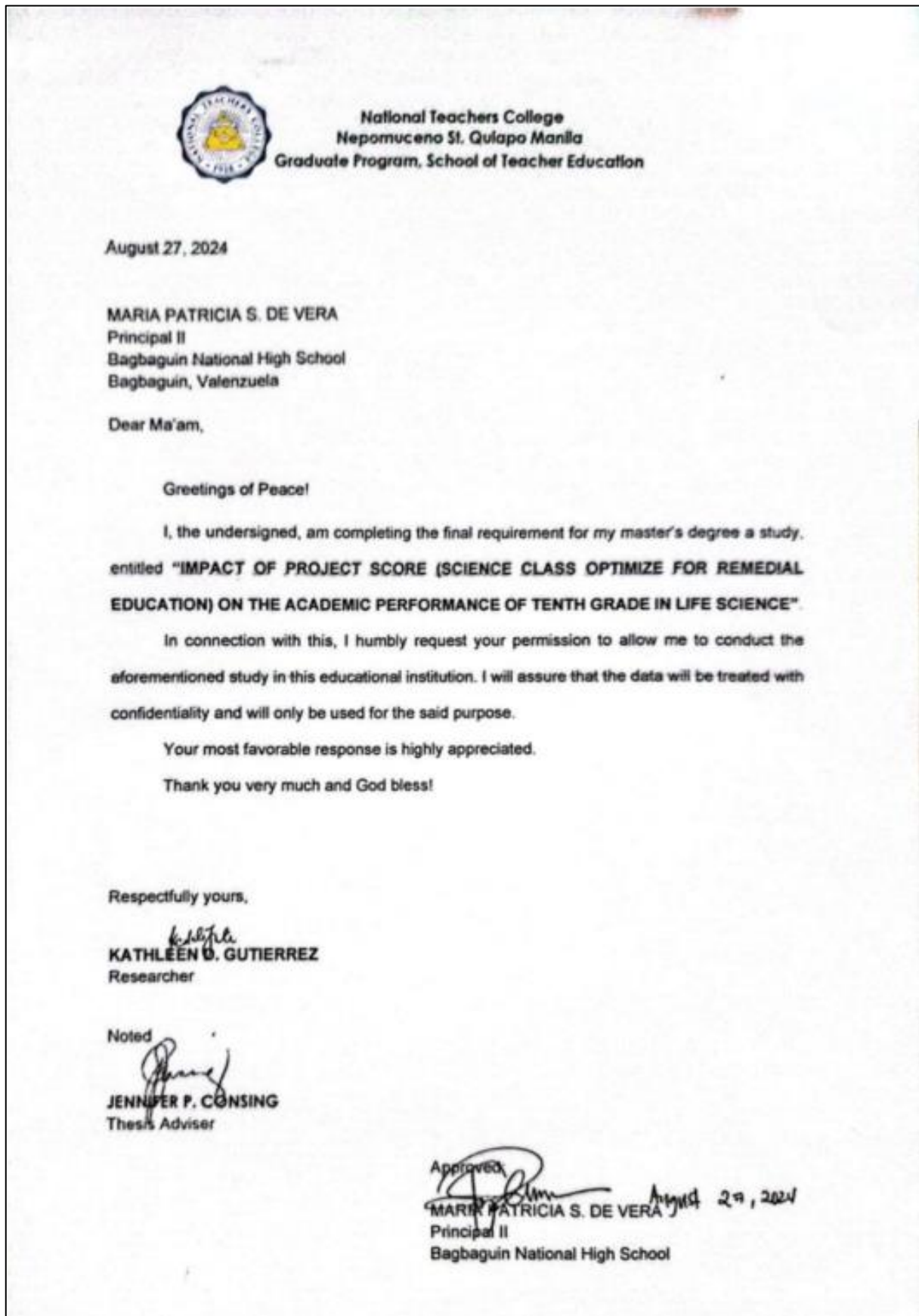
A. LETTER TO DIVISION OFFICE



B. LETTER FROM THE DIVISION OFFICE



C. LETTER TO BAGBAGUIN NAYIONAL HIGH SCHOOL



D. CONSENT LETTER

Informed Consent Statement

I, _____, give permission for my child, _____ to participate in the research project entitled, **“IMPACT OF PROJECT SCORE ON THE ACADEMIC PERFORMANCE OF TENTH GRADE LOW ACHIEVERS IN LIFE SCIENCE: BASIS FOR DEVELOPING REMEDIATION PROGRAM”**.

The study has been explained to me and my questions answered to my satisfaction. I understand that my child’s right to withdraw from participating or refuse to participate will be respected and that his/her responses and identity will be kept confidential. I give this consent voluntarily.

NAME OF PARENT/ SIGNATURE- Date

RESEARCHER Signature- Date

E. LETTER TO VALIDATORS



**National Teachers College
Nepomuceno St. Quiapo Manila
Graduate Program, School of Teacher Education**

May 4, 2024

Mr. Mark E. Embuldo
Head Teacher III
Bagbaguin National High School
Bagbaguin, Valenzuela City

Sir,


The undersigned is a Master of Arts in Education Major In General Science student in the said college and currently undertaking research entitled **"IMPACT OF PROJECT SCORE ON THE ACADEMIC PERFORMANCE OF TENTH GRADE LOW ACHIEVERS IN LIFE SCIENCE: BASIS FOR DEVELOPING REMEDIATION"**

In relation to this, the undersigned earnestly request your kind assistance in the validation of the research tool constructed for the abovementioned research. Your expertise and experience in the field of education and research will be of significance in the improvement of the tool. Attached herewith are the constructed research tool and evaluation sheet prepared for the purpose.

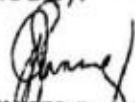
I hope that this request merits your favorable response.

Thank you very much and God bless.

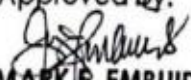
Sincerely yours,


KATHLEEN D. GUTIERREZ
Researcher

Noted by:


JENNIFER P. CONSING
Research Adviser

Approved by:


MARK E. EMBUIDO
Validator



**National Teachers College
Nepomuceno St. Qulapo Manila
Graduate Program, School of Teacher Education**

May 4, 2024

Mr. Orlle L. Orbita
Master Teacher I
Bagbaguin National High School
Bagbaguin, Valenzuela City

Sir,

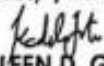
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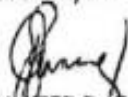
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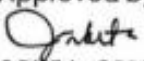
Sincerely yours,


KATHLEEN D. GUTIERREZ
Researcher

Noted by: .


JENNIFER P. CONSING
Research Adviser

Approved by:


ORLIE L. ORBITA
Validator

F. INSTRUMENT VALIDATION FORM


INSTRUMENT VALIDATION FORM			
RESEARCHER:	Kathleen D. Gutierrez	VALIDATOR:	MARK E. EMBUIDO
SCHOOL:	Bagbaguin NHS	OFFICE:	Bagbaguin NHS
GRADUATE SCHOOL:	National Teachers College	SPECIALIZATION:	Biological Science
COURSE:	Master of Arts in Education		
MAJOR:	General Science		

"IMPACT OF PROJECT SCORE ON THE ACADEMIC PERFORMANCE OF TENTH GRADE LOW ACHIEVERS IN LIFE SCIENCE: BASIS FOR DEVELOPING REMEDIATION"		
Directions: Please assess the extent to which the proposed pre-test post-test in Grade 10 Science meets certain criteria for good test instrument. Please show your evaluation by checking the column that corresponds to your assessment. The rating scale is explained below:		
5	To a very great extent	The instrument meets the criteria outstandingly.
4	To a considerate extent	The instrument meets the criteria satisfactorily.
3	To a moderate extent	The instrument meets the criteria fairly.
2	To a slight extent	The instrument slightly meets much the criteria.
1	To almost no extent	The instrument did not meet much the criteria.

CRITERIA	EVALUATION				
	5	4	3	2	1
A. Comprehensiveness of the content					
1. The proposed test instrument measures the competency of the students in Grade 10 Science.	✓				
B. Usability					
1. The proposed instrument can be easily scored.	✓				
2. The proposed instrument can be easily interpreted.	✓				
3. Each question has a correct answer that is agreed upon by the expert.	✓				

CRITERIA	EVALUATION				
	5	4	3	2	1
C. Organization					
1. The contents of the proposed test instrument are well organized.	/				
2. Questions contains correct terminology and universally accepted abbreviations.	/				
3. Questions contain relevant data needed to determine the correct answer.	/				
D. Adaptability					
1. The direction is clear, stated in simple language and easily understood by the respondents.	/				
2. The proposed test instrument is appropriate to intended students.	/				

Comments and Suggestions

Validator's Signature

 ORLIE L. ORBITA

INSTRUMENT VALIDATION FORM			
RESEARCHER:	Kathleen D. Gutierrez	VALIDATOR:	MARK E. EMBUIDO
SCHOOL:	Bagbaguin NHS	OFFICE:	Bagbaguin NHS
GRADUATE SCHOOL:	National Teachers College	SPECIALIZATION:	Biological Science
COURSE:	Master of Arts in Education		
MAJOR:	General Science		

"IMPACT OF PROJECT SCORE ON THE ACADEMIC PERFORMANCE OF TENTH GRADE LOW ACHIEVERS IN LIFE SCIENCE: BASIS FOR DEVELOPING REMEDIATION"		
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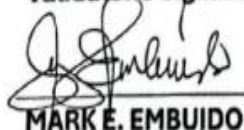
CRITERIA	EVALUATION				
	5	4	3	2	1
A. Comprehensiveness of the content					
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B. Usability					
1. The proposed instrument can be easily scored.	✓				
2. The proposed instrument can be easily interpreted.	✓				
3. Each question has a correct answer that is agreed upon by the expert.	✓				

CRITERIA	EVALUATION				
	5	4	3	2	1
C. Organization					
1. The contents of the proposed test instrument are well organized.	✓				
2. Questions contains correct terminology and universally accepted abbreviations.	✓				
3. Questions contain relevant data needed to determine the correct answer.		✓			
D. Adaptability					
1. The direction is clear, stated in simple language and easily understood by the respondents.		✓			
2. The proposed test instrument is appropriate to intended students.	✓				

Comments and Suggestions

1. Change the verb "are" into "is" in question # 2.
2. Omit the words "of the following" in item no. 3, 16, 22, 43, 41 and 49.
3. Rephrase the option A and B in question # 11.
4. Instead of exhibit, inhibit and stimulate, change it into exhibition, inhibition and stimulation in the options in item # 18.
5. Change "what" into "which" in item # 19.
6. Make sure that all questions are in WIT questions.
7. Follow proper punctuations, indention, spacing and arrangement of choices in each item.

Validator's Signature



MARK E. EMBUIDO

INSTRUMENT VALIDATION FORM			
RESEARCHER:	Kathleen D. Gutierrez	VALIDATOR:	MARY ROSE ANGELIE S. GATUS
SCHOOL:	Bagbaguin NHS	OFFICE:	SITERO FRANCISCO MEMORIAL NHS
GRADUATE SCHOOL:	National Teachers College	SPECIALIZATION:	Science
COURSE:	Master of Arts in Education		
MAJOR:	General Science		

"IMPACT OF PROJECT SCORE ON THE ACADEMIC PERFORMANCE OF TENTH GRADE LOW ACHIEVERS IN LIFE SCIENCE: BASIS FOR DEVELOPING REMEDIATION"
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1	To almost no extent	The instrument did not meet much the criteria.

CRITERIA	EVALUATION				
	5	4	3	2	1
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B. Usability					
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3. Each question has a correct answer that is agreed upon by the expert.	/				

CRITERIA	EVALUATION				
	5	4	3	2	1
C. Organization					
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2. Questions contain correct terminology and universally accepted abbreviations.	/				
3. Questions contain relevant data needed to determine the correct answer.	/				
D. Adaptability					
1. The direction is clear, stated in simple language and easily understood by the respondents.		/			
2. The proposed test instrument is appropriate to intended students.	/				

Comments and Suggestions

(1) Kindly change the directions to - Read and analyze the questions carefully. Choose the best answer and write the letter in the space provided before each number. (2) In question no. 15, change synthesize to synthesis. (3) In question no. 19, change what to which. (4) Covert questions no. 23, 24, 28, 34, and 39 to WH questions. (5) In question no. 47, the statement in option D is incomplete. (6) Kindly check the use of proper punctuation marks and the alignment of choices. (7) Overall, the instrument contains good questions which can measure the competency of learners in Grade 10 Science.

Validator's Signature

MARY ROSE ANGELIE S. GATUS

G. LESSON PLAN VALIDATION FORM

LESSON PLAN VALIDATION FORM			
RESEARCHER:	Kathleen D. Gutierrez	VALIDATOR:	MARK E. EMBUIDO
SCHOOL:	Bagbaguin NHS	OFFICE:	Bagbaguin NHS
GRADUATE SCHOOL:	National Teachers College	SPECIALIZATION:	Science
COURSE:	Master of Arts in Education		
MAJOR:	General Science		

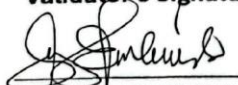
"IMPACT OF PROJECT SCORE ON THE ACADEMIC PERFORMANCE OF TENTH GRADE LOW ACHIEVERS IN LIFE SCIENCE: BASIS FOR DEVELOPING REMEDIATION"		
<p>Directions: This tool asks for your evaluation of the learning plan for the above-mentioned study. To establish its validity, you are requested to give honest evaluation using the criteria provided below. Please check () only one for every indicator.</p>		
SCALE	INTERPRETATION	DESCRIPTION
5	Very High Valid	The lesson plan covers lesson in science for the 3 rd quarter appropriate for Grade 10 students, allowing 0- 10% error.
4	Highly Valid	The lesson plan covers lesson in science for the 3 rd quarter appropriate for Grade 10 students, allowing 11- 20% error.
3	Valid	The lesson plan covers lesson in science for the 3 rd quarter appropriate for Grade 10 students, allowing 21- 30% error.
2	Less Valid	The lesson plan covers lesson in science for the 3 rd quarter appropriate for Grade 10 students, allowing 31- 40% error.
1	Not valid at all	The lesson plan covers lesson in science for the 3 rd quarter appropriate for Grade 10 students, allowing 41- 50% error.

CRITERIA	EVALUATION				
	5	4	3	2	1
C. Organization					
1. The contents of the proposed test instrument are well organized.	✓				
2. Questions contains correct terminology and universally accepted abbreviations.	✓				
3. Questions contain relevant data needed to determine the correct answer.		✓			
D. Adaptability					
1. The direction is clear, stated in simple language and easily understood by the respondents.		✓			
2. The proposed test instrument is appropriate to intended students.	✓				

Comments and Suggestions

1. Change the verb "are" into "is" in question # 2.
2. Omit the words "of the following" in item no. 3, 16, 22, 43, 41 and 49.
3. Rephrase the option A and B in question # 11
4. Instead of exhibit, inhibit and stimulate, change it into exhibition, inhibition and stimulation in the options in item # 18.
5. Change "what" into "which" in item # 19.
6. Make sure that all questions are in WIT questions.
7. Follow proper punctuations, indention, spacing and arrangement of choices in each item.

Validator's Signature


MARK E. EMBUIDO

LESSON PLAN VALIDATION FORM

LESSON PLAN VALIDATION FORM			
RESEARCHER:	Kathleen D. Gutierrez	VALIDATOR:	ORLIE L. ORBITA
SCHOOL:	Bagbaguin NHS	OFFICE:	Bagbaguin NHS
GRADUATE SCHOOL:	National Teachers College	SPECIALIZATION:	Science
COURSE:	Master of Arts in Education		
MAJOR:	General Science		

"IMPACT OF PROJECT SCORE ON THE ACADEMIC PERFORMANCE OF TENTH GRADE LOW ACHIEVERS IN LIFE SCIENCE: BASIS FOR DEVELOPING REMEDIATION"		
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INDICATORS	RATING				
	5	4	3	2	1
A. Comprehensiveness of the content					
1. The objectives of the lesson are specific, measurable, and attainable.					
2. The objectives provide various learning domains (Cognitive, Affective and Psychomotor).	/				
3. The objectives reflect the kind of evaluation method to be used.	/				
4. The procedure exemplifies the step-by-step development of the lesson.	/				
5. The development of the lesson encourages the teaching and learning process.	/				
6. The procedure reflects the teaching method/ strategies required.	/				
7. Appropriate formative assessment activity is provided to attain the objectives of the lessons.	/				
8. Varied methods and procedures for evaluation are indicated on the plan.	/				

Comments and Suggestions

The objectives should be SMART to ensure clarity and focus.

Reduce the number of activities as the time allotted is only one hour.

Validator's Signature



ORLIE L. ORBITA

LESSON PLAN VALIDATION FORM

LESSON PLAN VALIDATION FORM			
RESEARCHER:	Kathleen D. Gutierrez	VALIDATOR:	MARY ROSE ANGELIE S. GATUS
SCHOOL:	Bagbaguin NHS	OFFICE:	SITERO FRANCISCO MEMORIAL NHS
GRADUATE SCHOOL:	National Teachers College	SPECIALIZATION:	Science
COURSE:	Master of Arts in Education		
MAJOR:	General Science		

"IMPACT OF PROJECT SCORE ON THE ACADEMIC PERFORMANCE OF TENTH GRADE LOW ACHIEVERS IN LIFE SCIENCE: BASIS FOR DEVELOPING REMEDIATION"
Directions: This tool asks for your evaluation of the learning plan for the above-mentioned study. To establish its validity, you are requested to give honest evaluation using the criteria provided below. Please check () only one for every indicator.

SCALE	INTERPRETATION	DESCRIPTION
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A. Comprehensiveness of the content					
1. The objectives of the lesson are specific, measurable, and attainable.	/				
2. The objectives provide various learning domains (Cognitive, Affective and Psychomotor).			/		
3. The objectives reflect the kind of evaluation method to be used.	/				
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5. The development of the lesson encourages the teaching and learning process.	/				

6. The procedure reflects the teaching method/ strategies required.	/				
7. Appropriate formative assessment activity is provided to attain the objectives of the lessons.	/				
8. Varied methods and procedures for evaluation are indicated on the plan.	/				

Comments and Suggestions

(1) For the content standard, use (; and) after systems. Then, end the 2nd content standard with (.). (2) Kindly expound the learning competency targeting the three domains of learning (cognitive, affective, and psychomotor). (3) Overall, the flow and strategies presented on the learning plan are engaging and parallel to the main objective of the lesson.

Validator's Signature

MARY ROSE ANGELIE S. GATUS

H. PRE TEST

PRE-TEST

Name: _____ Score: _____ / 50

Grade Level and Section: GRADE 10 - _____ Date: _____

➤ *Directions:*

Read and answer each question carefully and then write the letter of your answer on the space provided before each number.

1. Which is responsible for male secondary hormones?

- a. Androgen
b. Estrogen
c. Luteinizing hormone
d. Progesterone

2. Where does puberty directly begin?

- a. Testes or gonads
b. Ovaries or gonads
c. Anterior pituitary gland
d. Corpus luteum

3. Which stimulates the release of luteinizing hormones?

- a. Androgen
b. Estrogen
c. Progesterone
d. Testosterone

4. Which is NOT a function of male hormones?

- a. Releases semen.
b. Produces sperm cells.
c. Prepares the growth of sperm cells.
d. Keeps the reproductive system in proper function.

5. Which organ secretes luteinizing and follicle stimulating hormones?

- a. Hypothalamus
b. Ovaries
c. Pituitary glands
d. Testes

6. What hormone stimulates the uterine lining in preparation for the implantation and nutrition of the early embryo?

- a. Androgen
b. Estrogen
c. Progesterone
d. Testosterone

7. What will happen if testosterone levels got too high?

- a. Testosterone level signals to directly inhibit FSH production.
b. Testosterone level signals to directly inhibit GnRH production.
c. LH production increases to counteract high testosterone levels.
d. FSH production increases to counteract high testosterone levels.

8. Which process describes the monthly release of an egg from the ovary?

- a. Fertilization
b. Gestation
c. Menstruation
d. Ovulation

9. Which part of male reproductive system does an androgen synthesize?

- a. Penis
b. Scrotum
c. Testes
d. Vas deferens

10. Which day does ovulation occur?

- a. 7th day
b. 9th day
c. 14th day
d. 28th day

11. What is NOT hormonally regulated in the female reproductive system?

- a. Egg growth and release
- b. Preparing the uterus for pregnancy
- c. Stretching the uterus during pregnancy
- d. Movement of the egg from the ovary to the uterus

12. Which statement does NOT describe the role of hormones in human development?

- a. Hormones regulate bodily processes.
- b. Hormones work in very small amounts.
- c. Large amounts of hormones promote human development.
- d. Hormones can determine whether a person develops a disorder

13. Which is the correct sequence of events in menstrual cycle?

- I. The egg matures.
- II. Egg moves into the uterus.
- III. Estrogen is given off by the ovary.
- IV. Unfertilized eggs are released from the body.

- a. III, I, II, IV
- b. II, III, I, IV
- c. I, II, III, IV
- d. I, III, II, IV

14. If FSH stimulates follicles to release estrogen, what will happen if estrogen level is high?

- a. Increased release of FSH
- b. The release of FSH doubled
- c. Decreased in FSH release
- d. The FSH remained the same

15. What organ system controls the human body activities?

- a. Circulatory system
- b. Digestive system
- c. Nervous system
- d. Respiratory system

16. Which device can we associate the nervous system?

- a. Computer
- b. Machine
- c. Radio
- d. Watch

17. Which among these movements are voluntary?

- a. Digestion
- b. Heartbeat
- c. Perspiration
- d. Walking

18. What body mechanism happens when pancreas releases insulin as a response to increase level of blood sugar?

- a. Anabolism
- b. Homeostasis
- c. Metabolism
- d. Secretion

19. Which is involved when a boy is running away from dogs?

- a. Relaxed mode
- b. Rest and digest
- c. Sympathetic Nervous system
- d. Parasympathetic Nervous system

20. How will your body respond if you drink too much water to achieve homeostasis?

- a. Sweating profusely to regulate body temperature.
- b. Directing your excretory organs to produce urine.
- c. Increasing the heart rate to induce blood pressure.
- d. Relaxing the muscles, causing the dilation of blood vessels.

21. Which example best demonstrates positive feedback mechanism?

- a. You cannot hold your breath for a long time.
- b. The release of growth hormones during puberty.
- c. Evaporation of sweat from the skin has a strong cooling effect.
- d. The skin releases heat energy and helps warm the body back to 37°C.

22. Which refers to the process of copying a DNA molecule into two identical copies?

- a. Replication b. Reverse c. Transcription d. Translation

23. What is the function of tRNA during protein synthesis?

- a. Block the process of translation.
b. Send the mRNA out in the cytoplasm.
c. Deliver amino acid to the mRNA strand.
d. Bring information from the DNA to protein.

24. Which statement best describes DNA as the “blueprint of life”?

- a. It has a blue color.
b. It is like a fingerprint.
c. It can relay messages to other molecules.
d. It contains the plans for building an organism.

25. The events that take place during the synthesis of a specific protein are listed below.

- I. Amino acids are bonded together. IV. RNA exits from the nucleus to the cytoplasm
II. Messenger RNA attaches to a ribosome V. DNA serves as a template for the production of RNA.
III. Transfer RNA bonds to specific codon

Which is the correct order of events?

- a. V, IV, II, III, I c. V, III, IV, I, II
b. I, II, IV, III, V d. III, V, II, IV, I

26. Which factor DOES NOT increase the risks of genetic mutations to offspring?

- a. Smoking c. Exposure to sunlight
b. Chemotherapy d. Conception at an old age

27. How do mutations lead to genetic variation?

- a. It changes the organism’s behavior.
b. Mutation affects the way organisms reproduce.
c. The organism’s appearance alters due to mutation.
d. By producing random changes in an organism’s genetic code

28. Which type of results into Cystic Fibrosis (CF), a recessive inherited disorder in which some glands produce too much mucus that clogs and damages the lungs?

- a. Deletion b. Duplication c. Insertion d. Inversion

29. Which shows the correct transcription, if three sets of these triplets in a strand of DNA are arranged as CGT-ACG-AAA?

- a. GCA-UGC-AAA c. GCA-UGC-UUU
b. GCA-UGC-TTT d. CGA-GUA-UUU

30. Which statement DOES NOT describe evolution?

- a. Evolution is continuous. c. The world is unstable and changing.
b. Evolution refers to change. d. If there is mutation, there is an evolution.

31. Which refers to the record of life forms and geological events in Earth’s history?

- a. Carbon dating c. Geological time scale
b. Fossil record d. Radioactive dating

32. What causes natural selection?

- a. Environmental change
- b. Earthquake
- c. Mutation
- d. Genetic disorder

33. What evidence is present when DNA, gene codes and expressions, as well as amino acids are basically shared by related species at the most basic level?

- a. Fossil evidence
- b. Genetic evidence
- c. Comparative anatomy evidence
- d. Embryonic development evidence

34. Why do organisms with close biochemical similarities show stronger evolutionary relationships?

- a. They have varied and different ancestry.
- b. They have a common ancestor and have the same kind of proteins.
- c. They possess same vestigial structure that made them evolutionary.
- d. They have similar patterns during their early stages of development.

35. Which pair of animals shows a correct example of homologous structures?

- a. Wings of a butterfly and a bat
- b. Flipper of a whale and forelimb of a cat
- c. Fingers of a human and arm of a starfish
- d. Tongue of a frog and proboscis of a mosquito

36. Analogous structures have similar function but different origin. Which example is NOT included?

- a. Fins of fish
- b. Wings of bats
- c. Tentacles of octopus
- d. Flippers of penguins

37. Which statement explains Lamarck's Theory of Use and Disuse?

- a. Body structures develop because of mutation.
- b. Body structures develop because of competition.
- c. Body structures develop because they are not in use.
- d. Body structures develop because they are used extensively.

38. Which theory of Lamarck suggests that acquired traits can be inherited by an organism?

- a. Theory of Need
- b. Theory of Adaption
- c. Theory of Use and Disuse
- d. Theory of Acquired Characteristics

39. Who among the following evolutionist believe that organisms change overtime?

- a. Charles Darwin
- b. Gregor Mendel
- c. Isaac Newton
- d. Jean Baptiste de Lamarck

40. Which refers to the process by which organism with favorable traits in the environment survive and reproduce?

- a. Evolution
- b. Comparative Anatomy
- c. Variation
- d. Natural selection

41. Why do giraffes with short neck were not able to survive based on Darwin's theory of evolution?

- a. Giraffes with long neck looked beautiful with short neck.
- b. Giraffes with long neck were very aggressive than giraffe with short neck.
- c. Giraffes with short neck were not able to survive due to inability to access food.
- d. Giraffes with short neck were not able to survive due to inability to fight against the giraffes with long neck.

42. Which is accurate about the description of homologous structures?

- a. Structure that functions and later disappear.
- b. Structures are similar in origin and structure. They evolve to fit the animal's way of life.
- c. Structure in different organisms that serve the same function. They show no evolutionary relationship between organisms.
- d. All of the above.

43. Which refers to the variation of living things in a specific area?

- a. Biodiversity
- B. Carrying Capacity
- C. Ecosystem
- D. Population

44. Which best describes species diversity?

- a. Variety of species within the biosphere
- b. Variety of species of a specific organism
- c. Variety of species within a habitat or a region
- d. Variety of species that are diverse but are related to their DNA

45. Which DOES NOT contribute to loss of biodiversity?

- a. Use of sustainable materials
- b. Mining of coal and other minerals
- c. Overpopulation of a species in a habitat
- d. Transforming a portion of forest to a residential area

46. Why are invasive species a threat to biodiversity?

- a. They can be used as alternative source of food.
- b. They can compete with the native organisms for their resources.
- c. They can cause harm to the environment by increasing its stability.
- d. They can have beneficial symbiotic relationship with other organisms.

47. Which statement DOES NOT describe the exponential growth model?

- a. There is a fixed growth in population
- b. Resources are limited for a population
- c. Resources are unlimited for a population
- d. There is a steady, continuous growth in a population

48. Why is it better for an ecosystem to have high biodiversity rather than low biodiversity?

- a. Ecosystem with high biodiversity can withstand environmental changes.
- b. Ecosystem with high biodiversity is more unstable towards environmental changes.
- c. Ecosystem with low biodiversity is more stable than ecosystem with high biodiversity
- d. Ecosystem with low biodiversity adapts better to climate-driven environmental changes than more diverse ecosystem.

49. A person breeds guinea pigs in a cage. After a few generations, the breeder observes that the guinea pigs are more aggressive towards each other, the young are less healthy and more young guinea pigs die. What do you think will happen to the population of the guinea pigs?

- a. The population will increase
- b. The population will decrease
- c. The population is not affected
- d. The population will remain the same


50. Which factor DOES NOT help in preventing carrying capacity to exceed?

- a. Reduce population
- b. Obtain new resources
- c. Migration to a different habitat
- d. Increase in population of different species to obtain stability

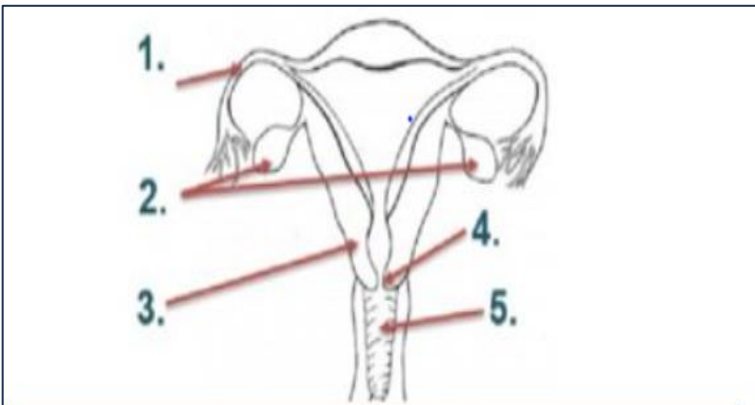
ANSWER KEY

1. A
2. C
3. B
4. C
5. C
6. C
7. B
8. C
9. C
10. D
11. D
12. C
13. A
14. C
15. C
16. A
17. D
18. B
19. C
20. B
21. B
22. A
23. C
24. D
25. A
26. C
27. D
28. A
29. C
30. D
31. C
32. A
33. B
34. B
35. B
36. C
37. D
38. D
39. A
40. D
41. C
42. A
43. A
44. C
45. A
46. B
47. D
48. A
49. B
50. D

I. TABLE OF SPECIFICATION

 Republic of the Philippines Department of Education NATIONAL CAPITAL REGION SCHOOLS DIVISION OFFICE YALENZUELA CITY BAGBAGUIN NATIONAL HIGH SCHOOL TABLE OF SPECIFICATION PRE-TEST GRADE 10- SCIENCE										
Most Essential Learning Competencies	Number of Days	TAXONOMY OF TEST ITEMS						Total Number of Items	Item Placement	Type of Test
		Remembering	Understanding	Analyzing	Applying	Evaluating	Creating			
		60%		30%		10%				
Explain the role of hormones involved in the female and male reproductive systems (S10LT-IIIb-34)	4	1,2,5	3,4,6,7					7	1,2,3,4,5,6,7	Multiple Choice
Describe the feedback mechanisms involved in regulating processes in the female reproductive system (e.g., menstrual cycle) (S10LT-IIIc-35)	4	8,9	10,11	12,13	14			7	8,9,10,11,12,13,14	Multiple Choice
Describe how the nervous system coordinates and regulates these feedback mechanisms to maintain homeostasis (S10LT-IIIc-36)	4	15,16	17,18	19,20	21			7	15,16,17,18,19,20,21	Multiple Choice
Explain how protein is made using information from DNA (S10LT-III d-37)	2	22	23		24	25		4	22,23,24,25	Multiple Choice
Explain how mutations may cause changes in the structure and function of a protein (S10LT-IIIe-38)	2	26	27	28	29			4	26,27,28,29	Multiple Choice
Explain how fossil records, comparative anatomy, and genetic information provide evidence for evolution (S10LT-III f-39)	4	30,31	32,33	35	36	34		7	30,31,32,33,34,35,36	Multiple Choice
Explain the occurrence of evolution (S10LT-IIIg-40)	4	37,38	39,40		42	41		6	37,38,39,40,41,42	Multiple Choice
Explain how species diversity increases the probability of adaptation and survival of organisms in changing environments (S10LT-IIIh-41)	4	43,47	44	45	46,50	48,49		4	43,44,45,46,47,48,49,50	Multiple Choice

J. LESSON PLAN

I. OBJECTIVES	
A. Content Standards	The learners demonstrate an understanding of: 1. organisms as having feedback mechanisms, which are coordinated by the nervous and endocrine systems 2. how these feedback mechanisms help the organism maintain homeostasis to reproduce and survive
B. Performance Standards	The learners create a campaign advertising video about the common and effective contraceptive measures used in family planning, in line with the Reproductive Health Law.
C. Learning Competencies/ Objectives Write the LC code for each	Describe the feedback mechanisms involved in regulating processes in the female reproductive system (e.g., menstrual cycle) using diagrams.
II. CONTENT	
Feedback Mechanism in Menstrual Cycle	
III. LEARNING RESOURCES	
A. References	
1. Teacher’s Guide pages	
2. Learner’s Materials pages	Department of Education –National Capital Region – SCIENCE– Grade 10 Alternative Delivery Mode- Quarter 3 – Living Things and Their Environment-First Edition, 2021- pp. 5-9 Department of Education –Region 1 – SCIENCE– Grade 10 Alternative Delivery Mode- Quarter 3 – Module 2: The Female Reproductive System and Menstrual Cycle-First Edition, 2020- pp. 4-18
3. Textbook pages	
4. Additional Materials from Learning Resource (LR) portal	
B. Other Learning Resources	*Kahoot.com and QR CODE
IV. PROCEDURES	
Greetings Opening Prayer Checking of Attendance	
A. Reviewing previous lesson or presenting the new lesson (ELICIT)	WHAT AM I? Students will label the different parts of the female reproductive system. <div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">WORD BANK</p> <p style="text-align: center;">VAGINA UTERUS CERVIX OVARIES FALLOPIAN TUBE</p> </div> Answer: 1. Fallopian tube 2. Ovaries 3. Uterus 4. Cervix 5. Vagina

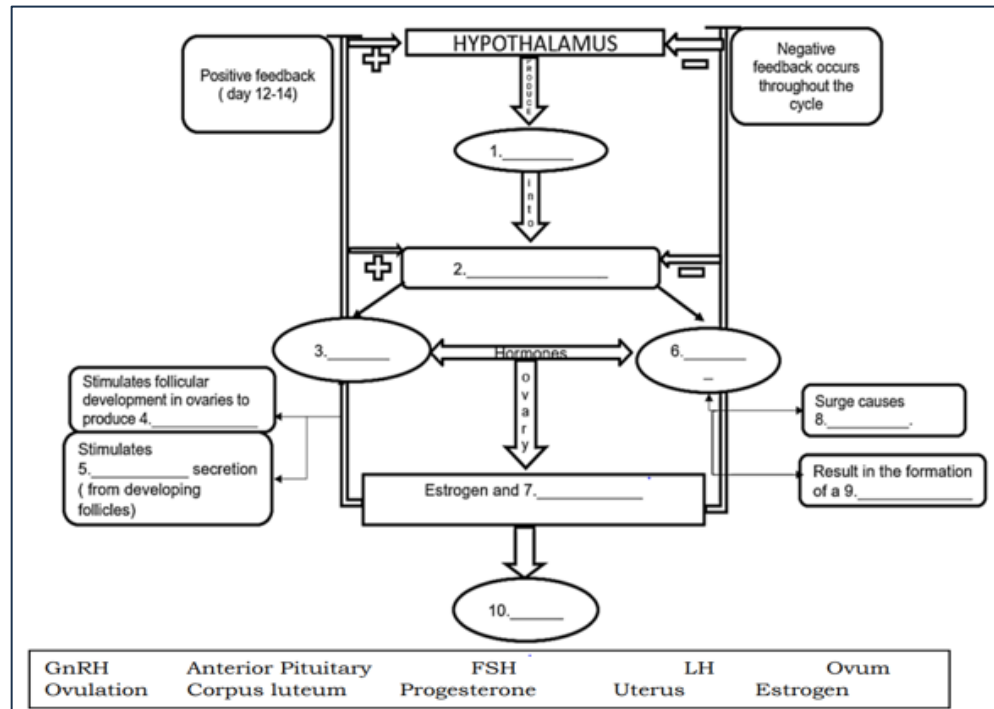
<p>B. Establishing a purpose for the lesson (ENGAGE)</p>	<p>HEAR ME OUT Students will rearrange the letters to form a word/ phrase that is related on the given clues.</p>
<p>C. Presenting examples/instances of the new lesson</p>	<p>SCRAMBLED WORDS: 1. (ORES NES) A _____ detects certain external stimuli and responds in a distinctive manner. 2. (POS IIEVT) _____ feedback encourages a physiological process or amplifies the action of a system. 3. (CONTIYXO) _____ is a hormone that stimulates contractions during labor, and then the production of milk. 4.(SISATSOEMOH) _____ is the ability of a living system to adjust its internal environment to maintain a state of balance. 5.(NETIVEGA FEDEBCKA) Systems where the effector of a process reduces the effect of the stimulus are called _____.</p> <p>ANSWER: 1. SENSORS 2. POSITIVE 3. OXYTOCIN 4. HOMEOSTASIS 5. NEGATIVE FEEDBACK</p>
<p>D. Discussing new concepts and practicing new skills #1 (EXPLORE)</p>	<p>THE WHEEL KEEPS ON TURNING (by pair) What you need: separate sheet of paper ball pen and pencil ruler and compass or any round object Coloring materials</p>
<p>1. Discussing new concepts and practicing new skills #2</p>	<p>What you have to do:</p> <p>1. Get a separate sheet of paper for your answers. Copy Figure 1. (blank Menstrual Cycle Diagram) on your paper. You may also opt to scan or photocopy the diagram if you wish to. Do not copy the questions, just write your answer or observations.</p> <p>2. Look at the diagram below. This is called a Menstrual Cycle Diagram. a. How many days do we usually have in a month? _____ b. How many days do we have in a menstrual cycle? _____</p> <div data-bbox="711 1339 1177 1756" data-label="Diagram"> </div> <p>Fig 1 Menstrual Cycle Diagram (Blank)</p> <p>3. Identify the numbers/days in a month that correspond to the different events in a menstrual cycle listed on the phases below. Color them accordingly in the copied Menstrual Cycle Diagram.</p> <p>c. The periodic or regular shedding of tissues and blood from the inner lining of the uterus is called the menstruation or period. It could be described as the discharge of blood from the uterine wall. These days are numbers _____ and will be colored red.</p> <p>Note: Different girls have different menstruation length, but the usual is 5 to 7 days.</p>

	<p>d. Uterine lining starts to thicken with new layer of tissue. An egg is developing in the ovary. This is called follicular phase and covers the first half of the menstrual cycle. These days are numbers _____ and will be colored yellow.</p> <p>Note: While menstruation happens in the early part of this phase, the ovaries are simultaneously preparing to ovulate again.</p> <p>e. The day when an egg may be released from any of the two ovaries is on day _____. This is called ovulation and will be colored blue. It is half-way in the cycle.</p> <p>Note: A female can get pregnant although ovulation is a one-day occurrence each month and the ovum can only survive from 12-24 hours after ovulation. Conception can occur within a six-day window, the five days leading up to ovulation and the day of ovulation, because sperm can live in the female body for up to five days.</p> <p>f. If the egg was not fertilized or implantation did not occur, hormonal changes signal the uterus to prepare to shed its lining. This is called the luteal phase, and it happens on days _____. Color these days green.</p> <p>Note: This phase starts right after ovulation and lasts until the next period.</p> <p>g. What might happen if the egg was fertilized by a sperm? _____</p>
<p>2. Developing mastery (leads to Formative Assessment 3) (EXPLAIN)</p>	<p>ARRANGE ME! Arrange the following in sequence from 1 to 5 with reference to Hormonal actions during menstrual cycle. Do it on a separate sheet of paper.</p> <p>___A. As estrogen and progesterone levels are too low to inhibit the anterior pituitary, the cycle can now begin again.</p> <p>___B. If fertilization does not occur, the corpus luteum eventually degenerates (forming a corpus albicans after ~ 2 weeks).</p> <p>___C. Estrogen and progesterone also inhibit secretion of FSH and LH, preventing any follicles from developing.</p> <p>___D. LH causes the dominant follicle to rupture and release an egg (secondary oocyte) – this is called ovulation.</p> <p>___E. Follicle stimulating hormone (FSH) is secreted from the anterior pituitary and stimulates growth of ovarian follicles.</p>
<p>3. Finding practical applications of concepts and skills in daily living (ELABORATE)</p>	<p>SCENARIO The teacher will present a short scenario. Then students will read the selection and give some ideas on PCOS.</p> <p>Sarah is a 28-year-old woman who has been experiencing irregular menstrual cycles, weight gain, and excessive facial hair growth over the past few months. Concerned about her health, she schedules an appointment with her gynecologist. After a series of tests, her doctor diagnoses her with Polycystic Ovary Syndrome (PCOS).</p> <p>Guide questions: 1. What is PCOS? 2. Why do you think some girls experienced this kind of condition? 3. How does PCOS affects the woman's reproductive health?</p>

4. Making generalizations and abstractions about the lesson

CONCEPT MAP- The Hormonal Actions During Menstrual Cycle

Complete the flow chart by choosing the correct terms inside the box.



5. Evaluating learning (EVALUATE)

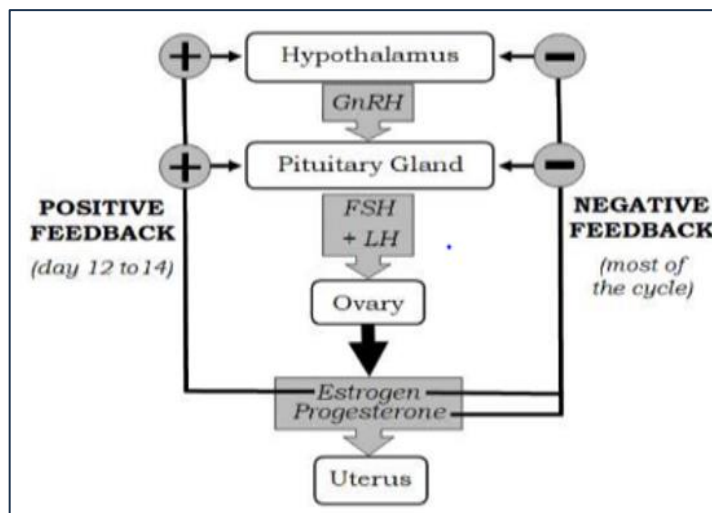
PAPER AND PEN

Answer the following questions.

1. Please refer to the diagram on the right.

During the menstrual cycle, which feedback mechanism keeps levels of FSH, LH, estrogen, and progesterone relatively stable?

- A. combined
- B. negative
- C. none
- D. positive



2. Physiological processes are commonly moderated via two distinct feedback mechanisms – positive and negative feedback. Which of the following pairs of events and feedback regulation is incorrect?

- A. Childbirth: positive feedback.
- B. Lactation: positive feedback.
- C. Menstruation: positive feedback
- D. Ovulation: negative feedback.

3. Which of the following statement about feedback mechanisms is true?

- A. Positive and negative feedback go away from a target.
- B. Positive feedback intensifies a response while negative feedback reduces the effect of a stimulus.

	<p>C. Positive goes to a target while negative does the opposite. D. Positive lessens a response while negative feedback increases the effect of a stimulus.</p> <p>4. A negative feedback affects the production of hormones in the menstrual cycle, where high levels of one hormone may _____ the production of another hormone. A. encourage B. increase C. inhibit D. maximize.</p> <p>5. What is maintained by the continuous feedback mechanisms in our body? A. growth B. health C. homeostasis D. life</p>
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<p>6. Additional activities for application or remediation (EXTEND)</p>	<p>PLUS, OR MINUS Students will put a plus sign or a minus sign based on the situation.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 20%;">Situations</th> <th style="width: 50%;">Brief Explanation</th> <th style="width: 20%;">Type of Feedback</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>childbirth</td> <td>The stretching of uterine walls causes contractions that <u>further</u> stretch the walls. These continues until birthing occurs.</td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td>lactation</td> <td>Suckling <u>stimulates</u> milk production which causes further feeding (continues until baby stops</td> <td></td> </tr> <tr> <td style="text-align: center;">3</td> <td>menstruation</td> <td>Follicles becomes the corpus luteum, and this produces estrogen and progesterone which <u>inhibit</u> FSH and LH secretion by the pituitary.</td> <td></td> </tr> <tr> <td style="text-align: center;">4</td> <td>ovulation</td> <td>The dominant follicle releases estrogen which <u>stimulates</u> LH and FSH release to promote further follicular growth.</td> <td></td> </tr> </tbody> </table>		Situations	Brief Explanation	Type of Feedback	1	childbirth	The stretching of uterine walls causes contractions that <u>further</u> stretch the walls. These continues until birthing occurs.		2	lactation	Suckling <u>stimulates</u> milk production which causes further feeding (continues until baby stops		3	menstruation	Follicles becomes the corpus luteum, and this produces estrogen and progesterone which <u>inhibit</u> FSH and LH secretion by the pituitary.		4	ovulation	The dominant follicle releases estrogen which <u>stimulates</u> LH and FSH release to promote further follicular growth.	
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V. REMARKS

VI. REFLECTION

A. No. of learners who earned 80% in the evaluation	
B. No. of learners who require additional activities for remediation	
C. Did the remedial lessons work? No. of learners who have caught up with the lesson	
D. No. of learners who continue to require remediation	
E. Which of my teaching strategies worked well? Why did these work?	
F. What difficulties did I encounter which my principal or supervisor can help me solve?	
G. What innovation or localized materials did I use/discover which I wish to share with other teachers?	

K. STATISTICAL TABLE

Paired Samples T-Test ▼

Paired Samples T-Test

Measure 1	Measure 2	W	z	df	p	Rank-Biserial Correlation	SE Rank-Biserial Correlation
PRE-MELCS1	- POST-MELCS1	0.00	-4.78		< .001	-1.00	0.21
PRE-MELCS2	- POST-MELCS2	9.00	-4.60		< .001	-0.96	0.21
PRE-MELCS3	- POST-MELCS3	4.00	-4.53		< .001	-0.98	0.21
PRE-MELCS4	- POST-MELCS4	19.50	-4.07		< .001	-0.90	0.22
PRE-MELCS5	- POST-MELCS5	7.00	-4.37		< .001	-0.96	0.22
PRE-MELCS6	- POST-MELCS6	0.00	-4.70		< .001	-1.00	0.21
PRE-MELCS7	- POST-MELCS7	8.00	-4.53		< .001	-0.96	0.21
PRE-MELCS8	- POST-MELCS8	0.00	-4.62		< .001	-1.00	0.21
PRE-TOTAL	- POST-TOTAL	0.00	-4.78		< .001	-1.00	0.21

Note. Wilcoxon signed-rank test.

Assumption Checks

Test of Normality (Shapiro-Wilk)

	W	p
PRE-MELCS1 - POST-MELCS1	0.92	0.04
PRE-MELCS2 - POST-MELCS2	0.88	3.58×10 ⁻³
PRE-MELCS3 - POST-MELCS3	0.95	0.15
PRE-MELCS4 - POST-MELCS4	0.93	0.05
PRE-MELCS5 - POST-MELCS5	0.92	0.04
PRE-MELCS6 - POST-MELCS6	0.93	0.05
PRE-MELCS7 - POST-MELCS7	0.89	4.82×10 ⁻³
PRE-MELCS8 - POST-MELCS8	0.95	0.22
PRE-TOTAL - POST-TOTAL	0.97	0.65

Note. Significant results suggest a deviation from normality.

Descriptives

Descriptives

	N	Mean	SD	SE	Coefficient of variation
PRE-MELCS1	30	2.13	1.04	0.19	0.49
POST-MELCS1	30	5.43	1.36	0.25	0.25
PRE-MELCS2	30	2.23	0.82	0.15	0.37
POST-MELCS2	30	4.23	0.73	0.13	0.17
PRE-MELCS3	30	2.37	1.16	0.21	0.49
POST-MELCS3	30	4.60	0.97	0.18	0.21
PRE-MELCS4	30	1.23	0.97	0.18	0.79
POST-MELCS4	30	2.70	0.65	0.12	0.24
PRE-MELCS5	30	1.10	0.92	0.17	0.84
POST-MELCS5	30	2.67	0.71	0.13	0.27
PRE-MELCS6	30	1.87	1.11	0.20	0.59
POST-MELCS6	30	4.27	1.08	0.20	0.25
PRE-MELCS7	30	1.83	0.99	0.18	0.54
POST-MELCS7	30	3.97	0.89	0.16	0.22
PRE-MELCS8	30	1.77	1.33	0.24	0.75
POST-MELCS8	30	4.97	1.40	0.26	0.28
PRE-TOTAL	30	14.53	3.63	0.66	0.25
POST-TOTAL	30	32.83	4.25	0.78	0.13