

The Use of Integrative Approaches in Lesson Planning in Mathematics

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Abstract:- This study determined the integrative approaches used in the Daily Lesson Plans (DLPs) in Mathematics. Specifically, it answered the following sub-problems: 1. What are the integrative approaches used in the Daily Lesson Plans (DLPs) in Mathematics? 2. What is the level of usage of the integrative approaches along: activity, analysis, application, abstraction, and assignment? 3. Is there a significant difference on the level of usage of the integrative approaches between the Junior High School and Senior High School along the different parts of the lesson plan? 4. What are the problems encountered by the teachers on the use of integrative approaches? and 5. What lesson exemplar as model on the use of integrative approaches may be developed?

The researcher employed the survey-comparative type of research. The integrative approaches used in the Daily Lesson Plans (DLPs) in Mathematics were identified and the level of usage to the different parts of the lesson. The hypothesis that there is no significant difference on the level of usage of the integrative approaches between the Junior High School and Senior High School along the different parts of the lesson plan were also tested. Likewise, the problems encountered by the teachers on the use of the integrative approaches determined and lesson exemplar was developed as model on the use of integrative approaches. The study has a total of 126 respondents but only 118 responses were retrieved or 94 percent retrieval rate. The data on the integrative approaches used in the Daily Lesson Plans (DLPs) in Mathematics was treated using frequency count and percentage. However, on the level of usage of the approaches in the lesson, frequency count and weighted mean were used. Frequency count and ranking were utilized to identify the problems encountered by the teachers.

I. INTRODUCTION

In recent years, a paradigm shift towards more holistic and interdisciplinary teaching techniques has evolved in the field of education. The integration of subjects is no longer seen as an abstract concept but rather as a pedagogical approach that enhances the depth and breadth of students' learning experiences. Integrative approaches in Mathematics lesson plans extend the boundaries of traditional teaching

methods which helps students grasp the practical applications of mathematical concepts. This relevance not only increases engagement but also demonstrates the significance of Mathematics in daily life. By connecting Mathematics to other disciplines such as science, technology, or arts, students develop a broader perspective on how knowledge intertwines.

This holistic understanding encourages critical thinking and nurtures a multidimensional approach to integrative problem-solving. Integrative approaches spark curiosity and motivation by presenting Mathematics in dynamic and relatable ways. Students are more likely to engage deeply when they see the subject's connections to their interests and passions. Integrative lesson plans cater to various learning styles, accommodating visual, auditory, kinesthetic, and interpersonal learners. The incorporation of different subjects provides multiple avenues for students to grasp mathematical concepts that allow teamwork and collaboration. Collaborative projects fostered by integrative approaches promote teamwork, communication, and creativity which are essential skills for success in modern workplaces and society.

The implementation of integrative approaches in lesson planning is aligned with diverse educational frameworks and policies that reinforce its significance in contemporary classrooms. As highlighted in Sustainable Development Goal (SDG) framework, the educational aspirations are prominently embodied in the Sustainable Development Goal 2030 (SDG 2030) aiming to ensure integrative and equal education that fosters opportunities for lifelong learning.¹ The goal is dedicated to providing equal and equitable education and fostering continuous learning opportunities.² The commitment to SDG 2030 has urged educators to embrace innovative pedagogical strategies in Mathematics, such as Problem-Based Learning (PBL), Project Based Learning (PrBL), contextualization, mathematical modeling, use of technology, interdisciplinary connection, real world-data analysis, cultural and historical context, extra-curricular activities and hands-on activities.

This study acknowledges the use of integrative approaches in lesson plans in Mathematics to better understand the integration of various subjects, skills, and teaching methods into a single lesson or unit. The purpose is to carefully examine the level of usage of integrative approaches

on the different parts of the lesson plan as part of the curriculum standards, learning objectives, and teaching mandated by the Department of Education. This study will further explore the problems encountered by teachers in the use of integrative approaches in lesson planning as part of the teaching approach to create a more holistic and engaging learning experience for students.

II. THEORETICAL FRAMEWORK

One of the theories that supports the study is the activity theory. Activity theory has its origins in the classical German philosophy of Kant and Hegel, the dialectical materialism of Marx, and the socio-cultural and socio-historical tradition of Russian psychologists such as Lev Vygotsky in 1930, Alexey Leont'ev in 1974, and Yrjö Engeström in 1987 (Nguyen Phu Loc et al., 2022)⁴⁷. When discussing how to improve the quality of teaching activities, we must consider the relationship among students, knowledge to be learned (teaching content), and the impact of teachers. Kim (2017)⁴⁸ believes that each teaching content is closely related to specific activities that students engage in while forming and applying that content. As a result, teaching is essentially discovering latent activities in content and mapping out a path for learners to dominate that content. Through activity theory, Vygotsky (2012)⁴⁹ has provided a systematic theoretical framework that clearly shows the relationship between the three constituent elements of an activity, namely subject, object, and tool. It echoes the activity theory's emphasis on recognizing the interconnected elements of subject, object, and tool within a given educational activity. This perspective encourages educators to go beyond the surface-level delivery of information and consider the dynamic and interactive nature of learning activities.

Incorporating activity theory into the study on integrative approaches in Mathematics marks a shift from traditional, information-centric teaching to a dynamic and interactive educational paradigm. Effective teaching, according to activity theory, extends beyond knowledge transmission to include recognizing and fostering activities that empower students in actively comprehending and applying mathematical concepts. This perspective acknowledges learning as an active process, prompting teachers to transition from conveyors of information to facilitators and guides of learning activities. Teachers are entrusted with unveiling latent activities in mathematical content and creating an environment conducive to active student participation through problem-solving, collaborative projects, and hands-on applications. This aligns with the integrative nature of the study, emphasizing the interconnectedness of mathematical concepts and skills.

Activity theory recognizes that students' engagement involves interconnected activities contributing to a deeper understanding. Additionally, it emphasizes the complex interplay between students, teaching content, and the impact of

teachers, urging educators to consider the socio-cultural context influencing students' comprehension and mastery of mathematical content. In essence, the integration of activity theory emphasizes the transformative role of teaching, asserting that effective instruction involves not only delivering information but also guiding and facilitating activities to enable active student engagement and mastery of mathematical content, seamlessly aligning with the integrative nature of the study.

Moreover, the interdisciplinary approach supports this study. Main (2023)⁵⁰ emphasized that the practical situation that students encounter in the learning process can make connections between ideas across different disciplines and boundaries using curriculum integration associated with the real world. In 1933, a method of teaching that was strongly advocated by John Dewey involved students in projects, and investigations that required the use of more than a single academic discipline. Dewey believed that to be educative, it was necessary that such projects present problems that awaken new curiosity and create a demand for information. There is a renewed interest in this approach because of the need to find alternative ways to address improvements in student achievement and the quality of instruction to raise test scores without —teaching-to-the-test. As a result, many teachers are incorporating aspects of interdisciplinary instruction in their teaching. The interdisciplinary approach accommodates students' diverse strengths and learning preferences and offers many opportunities for the differentiation of instruction.

Incorporating an interdisciplinary approach in integrative Mathematics lesson planning entails connecting mathematical concepts with real-world scenarios, as emphasized by Main and inspired by John Dewey's teaching method. This approach advocates for the integration of various disciplines which encourages teachers to design lessons that involve projects and investigations requiring the application of mathematical principles in connection with other academic areas. The transformed interest in this approach starts from the desire to move beyond teaching solely for standardized tests which fosters a more comprehensive and engaging learning experience. By embracing interdisciplinary instruction, educators acknowledge and cater to students' diverse strengths and learning preferences that allow for a personalized and differentiated approach to Mathematics education.

When it comes to the analysis phase in lesson planning, a philosophical approach on questioning is one of the appropriate strategies on students. The Socrates' approach to questioning, originating in 470-399 BC, revolves around disciplined and thoughtful dialogue. Socrates believed that engaging students in the disciplined practice of thoughtful questioning facilitates logical examination and determination of the validity of ideas. In this method, the teacher assumes ignorance of the topic to prompt a dialogue with students, a

form of 'acting dumb' that encourages students to develop a comprehensive understanding of the subject.

The Socratic questioning approach proves effective in exploring ideas in depth and is applicable at all educational levels, serving as a valuable tool for teachers. This method utilized at various points within a unit or project fosters independent thinking and grants student's ownership of their learning. It cultivates higher-level thinking skills as students engage in thinking, discussing, debating, evaluating, and analyzing content independently and collaboratively. Although Socratic questioning dialogues may occur after introducing a unit, it necessitates teachers to establish active learning environments that prioritize and appreciate the role of critical thinking, mobilizing students' capacity to formulate intricate thoughts and questions (Abdullah et al., 2022)⁵¹.

In the context of integrative approaches in lesson planning, the incorporation of Socratic questioning during the analysis phase enhances the interdisciplinary nature of education by fostering thoughtful dialogue and logical examination of ideas. This approach encourages the seamless integration of mathematical concepts with other disciplines, emphasizing the interconnectedness of knowledge. Socratic questioning promotes independent thinking and active engagement, aligning with the goals of integrative lesson planning to create dynamic, student-centered learning environments. By encouraging students to explore the broader implications of mathematical concepts and draw connections between subjects, this approach contributes to the development of well-rounded learners capable of applying knowledge across diverse academic domains.

Another theory that supports this study in the application phase of lesson planning is the experiential learning theory of David Kolb. Experiential learning, developed by Kolb in 1984, is a paradigm for resolving the contradiction between how information is gathered and how it is used. It is focused on learning through experience and evaluating learners in line with their previous experiences (Sternberg & Zhang, 2014)⁵². The paradigm highlights the importance of learners' participation in all learning processes and tackles the idea of how experience contributes to learning (Zhai et al., 2017)⁵³.

Kolb's experiential learning theory places a critical emphasis on active participation and engagement during the application phase of lesson planning. This means that the traditional notion of learning as a passive absorption of information is transformed into a dynamic process where students are actively involved in the application of knowledge. The theory advocates for collaborative and interactive tasks, encouraging students to work together, share perspectives, and collectively apply theoretical concepts to real-world scenarios. This not only fosters a sense of shared learning but also mirrors the collaborative nature of many professional environments.

The integration of activity theory in lesson planning signifies a shift from traditional teaching methods towards a more dynamic and interactive educational paradigm. By emphasizing the interconnected elements of educational activities and promoting active student engagement, this approach aligns with the integrative nature of Mathematics education. Furthermore, the incorporation of interdisciplinary instruction, Socratic questioning, and experiential learning enhances integrative approaches by connecting mathematical concepts to real-world scenarios, encouraging thoughtful dialogue and logical examination of ideas. These strategies transform the application phase into a dynamic, participatory, and reflective process, collectively enriching the learning experience.

III. REVIEW OF RELATED LITERATURE

As stated by Drobníč Vidic (2023)¹⁵, Mathematics serves as a foundational subject that underpins various academic fields like engineering and science. Given this natural and effective relationship between Mathematics and other disciplines, the study focuses on the integration of Inquiry-Based Learning, Problem-Based Learning, and Project-Based Learning within Mathematics education. Furthermore, it investigates how these approaches are connected to science and engineering. Through a concise examination of these teaching methodologies and theoretical comparisons, the study aims to discern the distinctions in how these approaches are applied in Mathematics education and their attributes in fostering interdisciplinary connections with other academic subjects.

Koberstein-Schwarz & Meisert (2022)² asserted that the promotion of planning competency is an essential task of teacher education. Effective planning is not just about creating lesson outlines; it involves the ability to align educational objectives, adapt to diverse student needs, and employ various instructional strategies. Prioritizing planning competency in teacher education ensures that educators are well-equipped to design engaging and effective learning experiences, ultimately benefiting students and enhancing overall educational outcomes.

Thus, effective learning occurs when meaningful connections are established throughout the entire curriculum. Often, students struggle to engage with subjects they deem challenging. While certain disciplines may possess greater complexity and abstraction, employing suitable teaching approaches can positively influence students' attitudes toward mastering these complex topics Gagic et al. (2019)³.

It was highlighted by Kaur (2019)⁴ that the need of integration of curriculum is a frequently felt need over time but has never been able to taken up due attention by the curriculum planners while planning the curriculum on account of the vastness of approach, its difficult operational modalities

and opposing view by groups who advocate the supremacy of academic excellence through specializations in specific subjects over integration of subjects. Many times, the timing of introducing integration is questioned by traditionalist academicians who argue that integration sometimes does more harm than good. Obviously, it is a superficial argument by them as they know curriculum integration is not an easy process but requires an extra edge with the curriculum practitioners.

Beane (2020)⁵ emphasized the longstanding connection between integrative approaches and progressive, democratic educational models in elementary and secondary schools. This connection encompasses various initiatives such as CORE Programs, the curriculum's experience-centered approach, and numerous problem-centered courses. Currently, some integrative approaches are gaining traction, alongside methodologies like project- and problem-centered activities, which have historical ties to integrative approaches. Nevertheless, the student-centered, democratic philosophy that characterizes integrative curriculum approaches has been diminishing due to the influence of bureaucratic subject-based standards, testing requirements, and rigid curriculum mandates.

According to Haapaniemi et al. (2019)⁸ “an essential skill in the twenty-first century is how to make sense of the complex flood of information”. Students need to cultivate the skill of linking fragmented information, which the authors refer to as integrative thinking. This capacity is crucial for their academic and cognitive development. It enables students to make meaningful connections between disparate pieces of knowledge.

It was found out by Farzam & Allahdadi (2018)⁹, that employing an integrative method in the instruction of Mathematics for primary school students through the utilization of educational games yielded notable enhancements in the quality of children's learning. The research indicated that this approach was highly effective in improving the educational outcomes of young learners. By adopting an integrative approach, where mathematical concepts were integrated into educational games, students were able to grasp mathematical principles more comprehensively. This innovative teaching method not only enhanced the overall learning experience but also contributed to the overall educational success of primary school students. Farzam and Allahdadi's findings underscore the significance of integrating interactive and engaging strategies in Mathematics education.

Pehoiu (2019)¹⁰ underscored the significance of integrated education as a crucial tool for instilling the correct mindset, fostering responsibility, and igniting motivation regarding environmental matters. Pehoiu's emphasis centered on the pivotal role of integrated education in shaping individuals' attitudes toward environmental concerns. The author stressed that through integrated education, individuals

can develop a deep-seated sense of responsibility for environmental stewardship. Furthermore, Pehoiu highlighted that such educational approaches are instrumental in motivating individuals to actively engage with and address environmental issues. In essence, Pehoiu's work underscores how integrated education serves as a catalyst for instilling the necessary values and determination to tackle environmental challenges effectively.

In the Philippines, the implementation of K-12 curriculum, integrative lesson plans have been introduced. Due to the importance of Mathematics education across the nation, the Philippines is upgrading the Filipino learners to global competitiveness by holistically developing them through the implementation of the new Philippine educational system, the implementation of K-12 curriculum. This reformation is mandated by Republic Act 10533, known as the —Enhanced Basic Education Act of 2013. One of the features of the K-12 is the use of the spiral progression approach to ensure mastery of knowledge and skills after each level. The implementing rules and regulation also state that —the curriculum shall be contextualized and global; and shall be flexible enough to enable and allow schools to localize, indigenize, and enhance the same based on their respective educational and social contexts and —the curriculum shall ensure integrated and seamless learning wherein subjects are taught from the simplest to complex in spiral progression wherein subjects are connected and integrated through grade levels (Official Gazette, 2019)¹⁶.

A project commissioned by UNICEF and the Philippines Department of Education Philippine conducted last March 2020 highlighted issues relevant to implementation of a skills integration agenda – these included how they are integrated in the curriculum, teacher support mechanisms, approaches to assessment, and education governance and regulation factors. The evaluation of existing practices showed that the predominant approach of the Philippine education system has been at curricular level, and the main conceptual approach has been to integrate skills into the curriculum, rather than as stand-alone areas of learning. The integration is within subjects, but in some cases also is planned within cross-disciplinary subjects. However, a notable area for future focus is teacher support for professional development. The issues raised questions on the diversity and utility of pedagogical strategies currently used in the Philippines.

Generic issues that face the Philippines' education system are critical, specific issues include the applicability such as critical thinking and communication to multiple subject areas. Findings showed that most teachers were unfamiliar with the Holistic Filipino Framework and the term “Holistically Developed Filipino”, and were not aware of the seven 21CS identified by DepEd. Some teachers reported that they attended Learning Action Cell Sessions on the topic of 21CS. However, they stated that the sessions did not contain detailed

information about skills or strategies on how to integrate them. Although the majority displayed little familiarity with the skills, upon being apprised of them, they reported that they try to integrate the skills spontaneously in their lessons every day. A common theme was the need for professional development, and concerns about class size and facilities impacting on their capacity to teach the skills.

The Philippines has placed an educational emphasis on the “holistically developed Filipino”. The need to focus on supporting students to develop a broad set of competencies has been acknowledged globally and refers to the knowledge, skills, values and attitudes. Following this mandate, DepEd Order No. 42, Series of 2017 National Adoption and Implementation of the Philippine Professional Standards for Teachers focused on Content Knowledge and Pedagogy, and specifically mentions strategies for developing critical and creative thinking, as well as other higher-order thinking skills in order for the main goal of nurturing the holistically developed Filipino for college and livelihood readiness (Scoular, 2020)¹⁷.

Teach Pinas (2022)¹⁸, a Philippine Community Website for Teachers, reiterated that in Section 5 of the Republic Act 10533, the curriculum shall use pedagogical approaches that are constructivist, inquiry-based, reflective, collaborative, and integrative. These 5 pedagogical approaches in the K-12 Curriculum will serve as a guide for teachers in teaching a lesson.

As a response to this, as cited in PressReader.com - Digital Newspaper & Magazine Subscription (2023)¹⁹, pointed out that integrative approach used in the Philippine educational system to go beyond Fragmented teaching for it incorporates multiple subjects which are usually taught separately, in an interdisciplinary method of teaching. The use of integrative approach focuses on integrating different subject matters to the topic or lesson discussed. Integrating can be done in several ways in lesson planning such as integration of real-life situations, integration of current topic to another subject, or even integrating diverse activities that will highlight the students’ different learning styles and intelligences. In an integrative teaching approach, the development of the whole personality of the student is more important than the subject matter.

In the analysis of Cardino & Dela Cruz (2020)²¹ of the influence of learning styles and teaching strategies on academic performance in Mathematics, four teaching strategies were emphasized including cooperative learning, deductive approach, inductive approach, and integrative approach. These approaches were found to have a significant influence on academic performance. By understanding the learning styles of students, teachers will be guided in designing different strategies to help students enhance learning for their improved performance in Mathematics.

As indicated by Padillo et. al (2021)²², the essential pillars of the teaching and learning process are pedagogical knowledge and content knowledge. The preparation of students for lifelong learning hinges on gaining a deeper comprehension of how pedagogy influences the learning experience. Classroom planning is a fundamental component of education, encompassing both the curriculum design and behavior management aspects. Proficient classroom management ensures a smooth teaching process, allowing educators to focus more on instructing and less on administrative tasks. Beyond the ability to plan lessons effectively, teachers should also possess the skills to deliver these lessons with impact. The adept utilization of teaching resources and methods plays a crucial role in enhancing the quality of courses, ultimately reflected in students’ performance.

Building upon this perspective, Campilla & Castañaga (2023)²⁴, emphasized the evolving role of 21st-century teachers as facilitators of learning. They are tasked with equipping students not only with subject knowledge but also with critical thinking skills, the ability to work collaboratively, effective communication skills, and the capacity to construct knowledge based on their prior experiences and apply this knowledge to real life. In the present educational landscape, Mathematics teachers are facilitators, guiding students in comprehending and integrating mathematical concepts. Within 21st-century math classrooms, educators employ a diverse array of instructional techniques and resources to actively engage learners.

IV. METHODOLOGY

Descriptive research is a method in research that aims to provide a precise and detailed description of phenomena that currently exist. Unlike experimental research, which not only examines phenomena as they are but also observes how they change after a specific treatment or intervention, descriptive research focuses solely on understanding what is already there. In descriptive research, researchers gather data that is readily available by using tools like tests, surveys, interviews, or observations. The primary objective of descriptive research is to systematically and accurately describe the phenomena that are the subject of the study.¹

In this study the researcher determined the integrative approaches in lesson planning. The study examined the level to which these approaches are used in various aspects such as activities, analysis, abstraction, application and assignment. Additionally, the research identifies the significant differences in the utilization of these approaches between Junior High School and Senior High School teachers. The problems encountered along these areas were identified and a model lesson exemplar in the use of integrative approaches was developed.

V. FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This study determined the integrative approaches used in the Daily Lesson Plans (DLPs) in Mathematics. Specifically, it answered the following sub-problems: 1. What are the integrative approaches used in the Daily Lesson Plans (DLPs) in Mathematics? 2. What is the level of usage of the integrative approaches along: activity, analysis, application, abstraction, and assignment? 3. Is there a significant difference on the level of usage of the integrative approaches between the Junior High School and Senior High School along the different parts of the lesson plan? 4. What are the problems encountered by the teachers on the use of integrative approaches? and 5. What lesson exemplar as model on the use of integrative approaches may be developed?

The researcher employed the survey-comparative type of research. The integrative approaches used in the Daily Lesson Plans (DLPs) in Mathematics were identified and the level of usage to the different parts of the lesson. The hypothesis that there is no significant difference on the level of usage of the integrative approaches between the Junior High School and Senior High School along the different parts of the lesson plan were also tested. Likewise, the problems encountered by the teachers on the use of the integrative approaches determined and lesson exemplar was developed as model on the use of integrative approaches. The study has a total of 126 respondents but only 118 responses were retrieved or 94 percent retrieval rate. The data on the integrative approaches used in the Daily Lesson Plans (DLPs) in Mathematics was treated using frequency count and percentage. However, on the level of usage of the approaches in the lesson, frequency count and weighted mean were used. Frequency count and ranking were utilized to identify the problems encountered by the teachers.

➤ Findings

- Out of 80 Junior High School teachers surveyed, 95% utilize Hands-on Activities, engaging students in practical tasks involving measurement and construction. 93.75% incorporate Mathematics in Context, integrating math with other subjects for real-life scenarios. 88.75% employ Problem-Based Learning, presenting students with real-world problems to solve collaboratively, while 87.50% use Mathematical Modeling, encouraging students to create math models for real-life situations. Real-World Data Analysis is used by 85% of teachers, involving students in analyzing real datasets. Cultural and Historical Context is explored by 71.25%, highlighting the cultural significance of math. In Senior High School, out of 38 respondents, similar methodologies are applied, with Mathematics in Context and Project-Based Learning being prominent. Across both groups, Mathematics in Context is the most prevalent approach, followed closely by Project-Based Learning. Meanwhile, the use of Technology, Extra-

Curricular Activities, and Interdisciplinary Connection also play significant roles in math education, albeit to a lesser extent.

- In the Junior High School, respondents consistently employ integrative approaches in abstraction (rated at 4.26), ensuring students generalize principles effectively. However, the application (4.16), analysis (4.14), activity (4.12), and assignment (4.04) are considered often. Similarly, Senior High School teachers exhibit a high level of usage in abstraction (4.25) but are often in analysis (4.19), application (4.16), activity (4.13), and assignment (4.06). Combining both groups' ratings, integrative approaches are consistently utilized in abstraction (4.26). However, often describes the usage levels in analysis (4.17), application (4.17), activity (4.13), and assignment (4.05).
- The computed value of F is 0.0008 for activity; 0.2223 for analysis; 0.0305 for abstraction; 0.0146 for application; and 0.2216 for assignment. These F-computed values are all less than the F-tabular value of 5.32 at 0.05 level of significance with 1 and 8 degrees of freedom, the null hypothesis is accepted. This means that there is no significant difference on the level of usage of integrative approaches between the Junior and the Senior High School Mathematics teachers.
- Junior High School teachers face several challenges when using integrative approaches, with lack of resources ranking highest, followed by limited training and seminar, and teacher expertise. Additionally, time constraints, complexity, and the need to cover curriculum standards contribute to the difficulties. Assessment, balancing depth and breadth, and accommodating varying student backgrounds are also problematic. Logistical challenges and resistance to change further complicate the integration process.

Similarly, Senior High School teachers encounter obstacles such as lack of resources, teacher expertise, and complexity. Limited training and seminar, time constraints, and the balance between depth and breadth are also significant issues. Varying student backgrounds, assessment difficulties, and ensuring curriculum standards are covered add to the challenges. Logistical issues and resistance to change are also present.

The top three problems identified from both groups are lack of resources, teacher expertise, and limited training and seminar. Other issues include complexity, time constraints, and balancing depth and breadth. Challenges related to student backgrounds, assessment, and curriculum standards are also notable. Finally, logistical challenges and resistance to change round out the list of obstacles faced by teachers using integrative approaches.

- A model lesson exemplar on the use of integrative approaches was developed to address the challenges encountered.

➤ *Conclusions*

- Teachers teaching Mathematics subjects be updated by the different integrative approaches. This can be done by attending trainings, seminars and workshops and the learnings they gained be applied in the preparation of the Daily Lesson Plan (DLPs).
- The use of integrative approaches in the preparation of Daily Lesson Plan (DLPs) be intensified by the Mathematics teachers, to help the students learn the required skills and for them to apply it in their daily living.
- The use of integrative approaches be properly explored by the Junior and Senior High School Mathematics teachers in order for them to give a wide range of ideas to the students that will lead to the full development of their mathematical skills.
- The problems encountered by the teachers be addressed in order to enhance the use of integrative approaches in the preparation of the Daily Lesson Plan (DLPs) in Mathematics.
- The developed model lesson exemplar on the use of the integrative approaches be utilized by the teachers to address the problems they encountered.

➤ *Recommendations*

- Teachers teaching Mathematics subjects be updated by the different integrative approaches. This can be done by attending trainings, seminars and workshops and the learnings they gained be applied in the preparation of the Daily Lesson Plan (DLPs).
- The use of integrative approaches in the preparation of Daily Lesson Plan (DLPs) be intensified by the Mathematics teachers, to help the students learn the required skills and for them to apply it in their daily living.
- The use of integrative approaches be properly explored by the Junior and Senior High School Mathematics teachers in order for them to give a wide range of ideas to the students that will lead to the full development of their mathematical skills.
- The problems encountered by the teachers be addressed in order to enhance the use of integrative approaches in the preparation of the Daily Lesson Plan (DLPs) in Mathematics.
- The developed model lesson exemplar on the use of the integrative approaches be utilized by the teachers to address the problems they encountered.

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