



IMPLEMENTATION AND EFFECTIVENESS OF THE SPIRAL PROGRESSION APPROACH IN SCIENCE EDUCATION IN NUEVA ECIJA DIVISION

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Abstract: This study aimed to assess the implementation of the Spiral Progression Approach in the teaching of Science in the public secondary schools of Cabiao District, Schools Division Office of Nueva Ecija, during the School Year 2024-2025. The research focused on understanding the extent to which Spiral Progression Approach was integrated into Science instruction, identifying the advantages and challenges of this approach, and exploring the common teaching strategies employed by Science teachers. The study involved Science teachers, with data collected through surveys that examined their qualifications, years of experience, and relevant training. The results showed that the majority of teachers had postgraduate qualifications, with many attending regional and division-level training. Furthermore, Spiral Progression Approach was largely implemented in teaching, with teachers utilizing various active learning strategies such as discovery-based learning, collaborative learning, and experiential activities. The study also found several benefits of Spiral Progression Approach, including the reinforcement of concepts over time, fostering deeper understanding, and promoting student retention. However, challenges such as pacing difficulties, sequencing instruction, and insufficient review were identified. The study highlighted the importance of continuous teacher development, curriculum refinement, and addressing the pacing issues to enhance the effectiveness of Spiral Progression Approach. Based on the findings, recommendations were provided for improving teacher training, curriculum development, and teaching strategies to ensure that Spiral Progression Approach is fully integrated into Science instruction, thereby supporting student mastery of key scientific concepts. This research contributes to the broader discourse on effective teaching strategies and provides insights into the practical application of the Spiral Progression Approach in secondary education.

Keywords: *Spiral Progression Approach, Science Education, Teaching Strategies,*

I. INTRODUCTION

The Spiral Progression Approach is a pedagogical model that involves revisiting key concepts at increasing levels of complexity over time. This approach aims to ensure that learners continuously engage with foundational knowledge while gradually building upon it. In this rationale, the research focuses on examining how the Spiral Progression Approach influences student outcomes across various educational contexts, informed by international, national, and local studies.

Globally, education systems are increasingly moving toward student-centered learning, where strategies like the Spiral Progression Approach are gaining attention for their potential to enhance conceptual understanding. According to Hattie (2019), strategies that promote deep learning, such as revisiting concepts and expanding them over time, tend to produce higher student achievement. International studies in countries like Finland and Singapore have demonstrated the effectiveness of such approaches in fostering higher-order thinking skills (Sahlberg, 2021; Lee & Spector, 2021). This trend reflects a global shift toward models that emphasize long-term retention and conceptual mastery, crucial for learners' success in an ever-changing world.

In mathematics, the Spiral Progression Approach has been widely adopted to help students move from concrete to abstract concepts. A study by Nunes and Bryant (2019) in the UK highlighted that spiral curricula support gradual mastery of mathematical concepts by revisiting topics such as fractions, algebra, and geometry in increasing depth over time. This method helps address issues of conceptual misunderstandings, providing students with multiple opportunities to consolidate their knowledge. By focusing on progressive learning, the Spiral Progression Approach prevents students from forgetting material after initial exposure and helps them build a more robust understanding of complex topics.

The application of the Spiral Progression Approach is not limited to mathematics but has also been explored in science education. The studies of American and Australian educators (Bybee et al., 2019) demonstrate that revisiting scientific principles in successive stages promotes better conceptual understanding. By revisiting topics such as ecosystems, chemical reactions, or energy transfer across different grade levels, students are able to grasp the subject matter in increasingly sophisticated ways. These studies underscore the effectiveness of the Spiral Progression Approach in fostering long-term engagement with scientific concepts.

In the Philippines, the Department of Education (DepEd) adopted the Spiral Progression Approach as a framework for designing the K-12 curriculum. Studies by Almonte-Acosta and Reyes (2017) show that the integration of the Spiral Progression Approach into the national curriculum has enhanced students' understanding in subjects like science and mathematics. In particular, the approach has been successful in reducing the gap between elementary and secondary school content. By ensuring that foundational knowledge is built upon progressively, the approach helps students transition smoothly between grade levels, avoiding the discontinuity that often hinders learning in traditional curricula.

In the context of the Philippines, research by Velasco (2019) indicates that students exhibit higher levels of engagement when their lessons are structured around revisiting topics with increasing complexity. This approach supports differentiated instruction, as teachers can tailor lessons to students' evolving needs, ensuring that all learners are continually challenged and supported. The Spiral Progression Approach helps in addressing the diverse learning paces and prior knowledge levels found in classrooms, particularly in rural areas where educational resources and teacher training may be limited.

The Spiral Progression Approach is especially valuable in addressing gaps in students' learning, which is a common issue in the Philippines, particularly in marginalized communities. According to studies by Garcia and Reyes (2018), the method of returning to previously covered topics and expanding on them offers students multiple opportunities to fill gaps in their knowledge. This is particularly important in areas with limited access to educational support, as students are less likely to experience the cycle of forgetfulness that can occur when topics are not revisited and reinforced.

A study conducted in Metro Manila by Santos and Punzalan (2021) examined the impact of the Spiral Progression Approach in public high schools. The research found that students who were taught using this approach exhibited stronger performance in final exams compared to those taught through traditional methods. The study highlighted that revisiting key topics, such as basic arithmetic operations, algebra, and geometry, allowed students to reinforce and expand their knowledge progressively. Teachers also reported greater ease in assessing students' understanding, as they were able to track students' progress over time and identify areas needing more attention.

In rural regions of the Philippines, teacher perceptions of the Spiral Progression Approach are generally positive, as shown in a study by Cruz and Rivera (2020). Teachers in these areas have reported that the approach is effective in promoting active student participation, as it allows students to engage with content repeatedly in various contexts. Teachers noted that students were able to connect previous lessons with new ones, which deepened their comprehension and motivated them to take ownership of their learning. Despite challenges such as limited resources and large class sizes, teachers expressed a belief that the Spiral Progression Approach helped improve their students' academic performance.

Research conducted in the province of Cebu by Reyes and Dela Cruz (2019) showed that the Spiral Progression Approach enhances students' conceptual understanding of complex topics. The study indicated that when students revisit a concept multiple times, they are able to make connections across different topics and grade levels, which leads to a deeper understanding. For example, students who studied ecology in elementary school were able to apply these principles to more complex topics in high school biology, such as environmental science and sustainable development.

Spiral Progression Approach led to significant improvements in student outcomes. The study by Aquino (2022) found that students in schools where the Spiral Progression Approach was used showed higher scores in standardized mathematics tests, especially in areas like problem-solving and logical reasoning. This suggests that the continuous reinforcement of mathematical concepts helped solidify students' foundational knowledge, allowing them to approach higher-level problems with more confidence.

The successful implementation of the Spiral Progression Approach requires proper teacher training and professional development. According to research by Ramirez and Salazar (2019), teachers who were trained in spiral curriculum strategies felt more confident in delivering lessons that cater to varying student needs. The study highlighted the importance of equipping teachers with the tools to design, implement, and assess spiral curricula effectively. Teacher professional development is therefore crucial to ensuring that the benefits of this approach are fully realized.

Despite its potential benefits, the implementation of the Spiral Progression Approach faces challenges, particularly in resource-limited settings. A study by Mendoza and Torres (2020) highlighted that schools in remote areas struggle with insufficient teaching materials, large class sizes, and limited access to technology. These factors can hinder the full implementation of the Spiral Progression Approach, as teachers may not have the resources or support needed to design and deliver spiraled lessons. Overcoming these challenges requires systemic improvements in education infrastructure and teacher training.

In recent years, technology has become an essential tool in supporting the Spiral Progression Approach. Research by Salazar and Tiu (2021) shows that digital platforms, such as interactive learning tools and educational software, can enhance the spiral learning process. These tools provide students with the ability to revisit topics at their own pace and in diverse formats, further reinforcing the core principles of the Spiral Progression Approach. The integration of technology can significantly improve the accessibility and effectiveness of this pedagogical model.

Future research should focus on exploring how the Spiral Progression Approach can be adapted to various subject areas and learning environments. While there is strong evidence for its effectiveness in mathematics and science, less is known about its application in subjects like the arts, humanities, or vocational education. Moreover, research could examine the long-term impacts of the Spiral Progression Approach on student retention, engagement, and career readiness.

The Spiral Progression Approach offers a promising strategy for enhancing student learning outcomes across diverse educational contexts. By revisiting and deepening knowledge over time, this approach supports long-term retention, promotes critical thinking, and caters to diverse learning needs. The growing body of international, national, and local studies supports the efficacy of this approach, making it an essential area of research for improving educational practices and outcomes worldwide.

Statement of the Problem

This study sought to assess the implementation of Spiral Progression Approach in the teaching of Science in the public secondary schools of Cabiao District, Schools Division Office of Nueva Ecija during the School Year 2024-2025.

Specifically, it sought to answer the following sub-problems:

1. What is the profile of the Science teachers in terms of the following:
 - 1.1 highest educational attainment;
 - 1.2 number of years of experience in teaching of Science; and
 - 1.3 relevant in-service training attended.
2. What is the extent of implementation of the Spiral Progression Approach in the teaching of Science?
3. Is there a significant relationship between the extent of implementation of Spiral Progression Approach in the teaching of Science and the profile of Science teachers?
4. What are the common teaching strategies used in teaching Spiral Progression Approach?
5. What are the advantages and disadvantages of Spiral Progression Approach?
6. Based on the findings, what development plan for Science teachers can be proposed to improve the teaching of Science using Spiral Progression Approach?

METHODOLOGY

Research Design

The study employed a **descriptive-correlational research design**, which aimed to assess the implementation of the Spiral Progression Approach in the teaching of Science in the public secondary schools of Cabiao District. This design was chosen because it allows for the systematic collection, description, and analysis of data related to the profile of Science teachers, the extent of implementation of the Spiral Progression Approach, the advantages and disadvantages of the approach, and the common teaching strategies used. Moreover, the study seeks to determine relationships between teacher characteristics and the extent of implementation of the Spiral Progression Approach.

Instrumentation and Data Collection

The study utilized survey questionnaires and semi-structured interviews as the primary data collection tools. The survey was designed to gather quantitative data on the following: Teacher profile (e.g., highest educational attainment, years of teaching experience, and in-service training related to the Spiral Progression Approach); the extent of implementation of the Spiral Progression Approach, as perceived by the teachers; the common teaching strategies employed in the Spiral Progression Approach; and the advantages and disadvantages of using the Spiral Progression Approach in the Science classroom.

The survey questionnaires were distributed to all Science teachers, and responses were collected electronically or in paper form, depending on the availability of technology and teacher preferences.

In addition to the survey, semi-structured interviews were conducted with a select group of teachers to gather in-depth qualitative data on their experiences, challenges, and perspectives regarding the Spiral Progression Approach. The interviews allowed for a deeper exploration of the factors influencing the implementation process and complemented the quantitative data from the surveys.

The approval and permission to conduct the study was obtained by the researcher from the Schools Division Superintendent of Nueva Ecija.

Tools for Data Analysis

To derive valid and accurate results, appropriate statistical measures were employed.

To answer sub-problem 1 regarding the professional profile of the Science teachers, frequency counts and percentages, using the formula below, was used.

$$\text{Percentage} = \frac{F}{N} \times 100$$

Where:

F = Frequency

N = total number of respondents

To answer sub-problem 2, the implementation of Spiral Progression Approach, the average weighted mean (AWM) was used.

$$\text{AWM} = \frac{\sum WM}{I}$$

Where: $\sum WM$ = Weighted Mean
I = no. of items/indicators

Rating	Mean Range	Descriptive Equivalent
5	4.21 - 5.00	Fully Implemented (FI)
4	3.41 - 4.20	Implemented (I)
3	2.61 - 3.40	Moderately Implemented (MI)
2	1.81 - 2.60	Slightly Implemented (SI)
1	1.00 - 1.80	Not Implemented (NI)

To answer sub-problem 3, on the significant relationship between the extent of implementation of Spiral Progression Approach and profile variables of the teachers, Pearson-r was used.

To answer sub-problem 4, advantages and disadvantages of Spiral Progression Approach, the average weighted mean (AWM) was used using the following mean scale.

Rating	Mean Range	Descriptive Equivalent
5	4.21 - 5.00	Always (A)
4	3.41 - 4.20	Often (O)
3	2.61 - 3.40	Sometimes (S)
2	1.81 - 2.60	Rarely (R)
1	1.00 - 1.80	Not at All (NA)

To answer sub-problem 5, the common teaching strategies used in teaching Spiral Progression Approach, the frequency counts and percentages was used.

RESULTS AND DISCUSSION

This chapter presents the elements of presenting and interpreting data to answer the sub-problems posited in the chapter of the study.

Profile of the Science Teachers

The profile of Science teachers in terms of highest educational attainment, number of years of experience in teaching of Science, and relevant in-service training attended was presented in Table 1.

Table 1
Profile of the Science Teachers

Highest Educational Attainment	Frequency	Percentage Rate
With M.A/MEd/Units	18	54.55
MAEd/MEd	11	33.33
With Doctoral Units	4	12.12
Total	33	100
Number of Years of Experience in Teaching of Science	Frequency	Percentage Rate
10 years and below	16	48.48
11-20 years	13	39.39
21-30 years	4	12.12
Total	33	100
Relevant Training Attended	Frequency	Percentage
International	12	36.36
National	11	33.33
Regional	27	81.81
Division	33	100

**Multiple Responses*

The data collected from the survey questionnaires provide valuable insights into the profile of public secondary school Science teachers in Cabiao District regarding their highest educational attainment, years of experience in teaching Science, and the relevant training they have attended.

Highest Educational Attainment. Out of the 33 Science teachers surveyed, the majority with 18 or 54.55% have completed their Master's degree or have earned units in a Master's degree (M.A./Med/Units). This suggests that a significant proportion of teachers possess advanced academic qualifications that may contribute to their pedagogical expertise. A substantial number with 11 or 33.33% hold Master of Arts in Education (MAEd) or Master of Education (MEd), highlighting the teachers' commitment to professional development in the field of education.

Number of Years of Experience in Teaching Science. The experience levels of the teachers vary, with 16 or 48.48% having 10 years or less of teaching experience, followed by 13 or 39.39% with 11 to 20 years of experience. A smaller group of 4 or 12.12% has 21 to 30 years of experience in teaching Science.

Relevant Training Attended. The data on relevant training attended show that 12 or 36.36% of teachers have participated in international training, 11 or 33.33% in national training, and 81.81% have attended regional training. Notably, all 33 teachers with 33 or 100% have attended division-level training, indicating that training at the local division level is highly accessible and mandatory for teachers. The high participation rate in regional and division training suggests that the teachers are actively seeking professional development opportunities to enhance their teaching practices, particularly in the context of the Spiral Progression Approach.

The extent of implementation of the Spiral Progression Approach in the teaching of Science is presented in Table 2.

Table 2
Extent of Implementation of Spiral Progression Approach

Indicators	Weighted Mean	Descriptive Equivalent
1. Teaches and learns process is based on the Spiral Progression Approach.	3.59	Implemented
2. Utilizes research-based practices and materials.	3.41	Implemented
3. Utilizes individual and cooperative learning activities to improve the competency of the learners for higher learning.	3.51	Implemented

4. Ensures vertical articulation and seamless progression of competencies.	3.56	Implemented
5. Provide variety of learning experiences.	3.23	Moderately Implemented
6. Utilizes of highly academic universal standards in teaching to produce globally competitive graduates.	3.31	Moderately Implemented
7. Explores integrative and interactive strategies for meaningful and holistic development of the students.	3.72	Implemented
8. Provides differentiated activities for the learners.	3.54	Implemented
9. Conceptualizes the curriculum to make it culture-sensitive, responsive, flexible and suitable using Spiral Progression Approach.	3.56	Implemented
10. Implements Spiral Progression Approach in all subject areas being taught.	3.44	Implemented
11. Reinforces what is actually learned through the use of indigenous materials.	3.44	Implemented
12. Employs Content-Based Instruction in teaching.	3.44	Implemented
13. Allows gradual mastery from one grade level to the next.	3.59	Implemented
14. Builds students prior knowledge and perspective into structural.	3.57	Implemented
15. Infuses local knowledge and perspective into structural layer of the institution.	3.33	Moderately Implemented
16. Creates a more inclusive environment through presentation of the different world views to enhance and enrich the educational experiences.	3.26	Moderately Implemented
17. Conceptualizes the curriculum to make it culture-sensitive, responsive, flexible and suitable community.	3.23	Moderately Implemented
18. Learns through repeated exercises of a concept.	3.31	Moderately Implemented
19. Learns best by building on students' current knowledge.	3.62	Implemented
20. Returns to basic ideas as new subject and concepts are added.	3.90	Implemented
21. Implements/use the specific features of the Spiral Progression Approach in teaching Science	3.82	Implemented
22. Has knowledge of the learning contents of the Grade level subject areas that lend themselves to the Spiral Progression Approach.	3.82	Implemented
23. Coordinates with the teachers of preceding and succeeding Grade levels.	3.92	Implemented
Average Weighted Mean	3.37	Moderately Implemented

Legend**Point Value****Mean Range****Descriptive Equivalent**

5

4.21-5.00

Fully Implemented (FI)

4

3.41-4.20

Implemented (I)

3

2.61-3.40

Moderately Implemented (MI)

2

1.81-2.60

Slightly Implemented (SI)

1

1.00-1.80

Not Implemented (NI)

Table 2 presents the weighted mean scores for the implementation of various indicators related to the Spiral Progression Approach in the teaching of Science in the public secondary schools of Cabiao District. The table categorizes the indicators based on how effectively the Spiral Progression Approach is being implemented, as perceived by the respondents. These indicators assess different aspects of the teaching approach, from the process of teaching and learning to the strategies employed in the classroom.

Indicators with higher weighted means (above 3.40) were categorized as "Implemented." These indicators reflect core practices of the Spiral Progression Approach that have been successfully integrated into the teaching process. For example, **Indicator 1** ("Teaches and learns process is based on the Spiral Progression Approach") has a weighted mean of 3.59, signifying that the Spiral Progression Approach is widely adopted as the foundation for teaching and learning. Similarly, **Indicator 4** ("Ensures vertical articulation and seamless progression of competencies") with a mean score of 3.56 indicates that there is a clear effort to ensure that competencies build upon one another as students progress through the grade levels. Other indicators such as **Indicator 3** ("Utilizes individual and cooperative learning activities") and **Indicator 7** ("Explores integrative and interactive strategies") also have relatively high mean scores (3.51 and 3.72, respectively), reflecting a focus on interactive and cooperative learning strategies, which are essential elements of the Spiral Progression Approach.

Several indicators received mean scores between 3.23 and 3.40, which fall under the category "Moderately Implemented." These indicators, such as **Indicator 5** ("Provide variety of learning experiences") and **Indicator 6** ("Utilizes highly academic universal standards in teaching"), suggest that while these practices are being incorporated, there may be room for improvement in their full implementation. These scores indicate that teachers are making efforts to offer diverse learning experiences and align teaching with global standards, but the application may not be as consistent across all instances.

A few indicators, such as **Indicator 15** ("Infuses local knowledge and perspective into the structural layer of the institution") and **Indicator 16** ("Creates a more inclusive environment through presentation of different world views"), have weighted mean scores of 3.33 and 3.26, respectively, indicating that these areas are only "Moderately Implemented." These indicators suggest that there is some effort to integrate local knowledge and create an inclusive learning environment, but further focus and refinement may be necessary to fully achieve the desired outcomes of the Spiral Progression Approach.

The **Average Weighted Mean** for all the indicators is 3.37, which categorizes the overall implementation of the Spiral Progression Approach as "Moderately Implemented." This suggests that while the approach is being applied in most areas of

teaching, there are still aspects that require further attention and enhancement. The data reveals that certain elements, such as ensuring cultural sensitivity and creating inclusive environments, are areas where implementation can be improved.

Table 3

Significant Relationship between the Extent of Implementation of Spiral Progression Approach in the Teaching of Science and the Profile of Science Teachers

Profile Variable	Extent of Implementation of Spiral Progression Approach		
	Statistics	level	p-value
Highest Educational Attainment	69.59	strong	<0.0001*
Length of Experience as Science	-0.21	weak	0.05*
Relevant Training Attended	0.67	strong	<0.001*

*significant $\alpha=0.05$ (1-tail)

**significant $\alpha=0.01$ (2-tail)

Table 3 presents a significant relationship between the extent of the implementation of the Spiral Progression Approach in the teaching of Science and the profile variables of Science teachers. The highest educational attainment showed a **strong** relationship with Spiral Progression Approach implementation, with a statistical value of 69.59 and a highly significant **p-value of < 0.0001**, indicating that teachers with higher educational qualifications are more likely to effectively implement the Spiral Progression Approach in their teaching. This finding aligns with research that suggests higher academic qualifications positively influence teaching practices (Johnson, 2023). On the other hand, the **length of experience as a science teacher** exhibited a **weak** relationship with SPA implementation, with a statistical value of -0.21 and a **p-value of 0.05**. This weak correlation indicates that the years of teaching experience alone do not significantly affect the implementation of SPA, suggesting that experience, although valuable, is not the sole determinant of teaching effectiveness in this context. This is supported by studies that show teaching experience must be complemented by continuous professional development to enhance its impact on teaching practices (Williams & Tan, 2022).

Common Teaching Strategies Used

Table 4

Common Teaching Strategies Used

Strategies	Frequency	Percentage
1. Discovery/Inquiry Learning	30	90.91
2. Collaborative Learning	28	84.85
3. Experiential Learning	29	87.88
4. Cooperative	27	81.82
5. Jig-Saw Puzzle	23	69.70
6. Buzz Session	23	69.70
7. Child-Centered Approach	26	78.79
8. Round-robin	24	72.73
9. Think-pair-share	24	72.73
10. Role play	28	84.85
11. Portfolio's and Journal	28	84.85
12. Whole Brain Teaching	24	72.73
13. Group Investigation	27	81.82

Table 4 provides the frequency and percentage of common teaching strategies employed by Science teachers of public secondary school teachers in Cabiao District, reflecting their pedagogical practices during the implementation of the Spiral Progression Approach. These strategies are diverse, including a variety of methods that promote active learning, student collaboration, and engagement.

Discovery/Inquiry Learning. Discovery or inquiry-based learning is the most frequently used strategy, with 90.91% of teachers employing it. This teaching method encourages students to explore and investigate topics on their own, fostering critical thinking and problem-solving skills.

Collaborative Learning. Collaborative learning is used by 84.85% of teachers. This strategy involves students working together to achieve learning goals, promoting teamwork, communication, and the sharing of ideas.

Experiential Learning. Experiential learning, with 87.88% of teachers using it, emphasizes learning through direct experience, such as experiments, field trips, and hands-on activities.

Cooperative Learning. Cooperative learning is employed by 81.82% of teachers. Similar to collaborative learning, this method involves students working in small groups to complete tasks, but it places more focus on individual accountability and team responsibility.

Jig-Saw Puzzle. The Jig-Saw Puzzle strategy, used by 69.70% of teachers, involves breaking down a topic into smaller sections, with each student becoming an expert on one segment and then teaching it to their peers.

Buzz Session (Frequency: 23, Percentage: 69.70%) The Buzz Session strategy, used by 69.70% of teachers, is a quick group discussion where students share ideas on a specific topic.

Child-Centered Approach (Frequency: 26, Percentage: 78.79%) With 78.79% of teachers using it, the child-centered approach focuses on the needs, interests, and abilities of students.

Round-Robin. The Round-Robin strategy, used by 72.73% of teachers, involves students taking turns to respond or contribute to a discussion or activity.

Think-Pair-Share. Think-Pair-Share is another strategy employed by 72.73% of teachers, where students first think individually, then discuss their thoughts with a partner, and finally share with the larger group.

Role Play. Role play is used by 84.85% of teachers. This strategy allows students to act out scenarios, which can help them better understand and internalize concepts.

Portfolios and Journals. Portfolios and journals, used by 84.85% of teachers, provide students with an opportunity to reflect on their learning, track their progress, and consolidate knowledge.

Whole Brain Teaching. Whole Brain Teaching, used by 72.73% of teachers, involves engaging multiple areas of the brain by combining physical movement, discussion, and writing.

Group Investigation. Group Investigation, used by 81.82% of teachers, involves students working in groups to investigate a topic, analyze data, and present their findings. This collaborative strategy encourages inquiry-based learning and allows for the revisiting of concepts through research and discussion, in line with the Spiral Progression Approach.

Advantages and Disadvantages of Spiral Progression

The advantages and disadvantages of Spiral Progression Approach are presented in Tables 5a-5b.

Table 5a
Advantages of Spiral Progression

Indicators	Mean	Descriptive Equivalent
1. Avoids disjunction between stages of schooling	3.34	Often
2. Allows learners to learn topics and skills appropriate to their development/ cognitive stages.	3.60	Often
3. Allows learners to learn topics and skills as they are revisited and consolidated.	3.27	Sometimes
4. It strengthens retention and mastery of topics and skills as they revisited and consolidated	3.06	Sometimes
5. It allows learners to gain valid experiences.	3.26	Sometimes
AWM	3.31	Sometimes

Legend

Rating	Mean Range	Descriptive Equivalent
5	4.21 - 5.00	Always (A)
4	3.41 - 4.20	Often (O)
3	2.61 - 3.40	Sometimes (S)
2	1.81 - 2.60	Rarely (R)
1	1.00 - 1.80	Not at All (NA)

Table 5a presents the mean scores for various advantages of the Spiral Progression Approach as perceived by the Science teachers in the public secondary schools of Cabiao District. These advantages are assessed based on how often they are observed in the classroom, with the descriptive equivalents providing insight into the frequency of each advantage's occurrence. The mean scores range from 3.06 to 3.60, suggesting that the advantages of Spiral Progression are experienced by the teachers **sometimes to often**.

Avoids Disjunction Between Stages of Schooling. The indicator "Avoids disjunction between stages of schooling" has a mean score of 3.34, which falls under the "Often" category. This suggests that teachers often perceive the Spiral Progression Approach as effective in creating a seamless transition between grade levels.

Allows Learners to Learn Topics and Skills Appropriate to Their Development/Cognitive Stages. This indicator has the highest mean score of 3.60, classified as "Often." It suggests that the Spiral Progression Approach is frequently seen as a method that aligns learning topics and skills with the developmental and cognitive stages of learners.

Allows Learners to Learn Topics and Skills as They Are Revisited and Consolidated. With a mean score of 3.27, this indicator is categorized as "Sometimes." It indicates that while the Spiral Progression Approach does allow learners to revisit and consolidate topics and skills, this advantage is not always consistently realized. Some teachers may not always have the opportunity or resources to provide enough repetition and consolidation to ensure mastery.

Strengthens Retention and Mastery of Topics and Skills as They Are Revisited and Consolidated. The indicator concerning the strengthening of retention and mastery through revisiting and consolidating topics has a mean score of 3.06, which falls under the "Sometimes" category.

Allows Learners to Gain Valid Experiences. With a mean score of 3.26, this indicator is also categorized as "Sometimes." It implies that while the Spiral Progression Approach allows learners to gain valid experiences, the consistency of this advantage depends on how well the approach is implemented in practice.

Average Weighted Mean. The average weighted mean of 3.31 for all indicators falls in the "Sometimes" category, indicating that the advantages of Spiral Progression are experienced occasionally. .

Table 5b
Disadvantages of Spiral Progression
(N=33)

Indicators	Mean	Descriptive Equivalent
1. Does not promote sufficient review once units are completed.	3.13	Sometimes
2. The rate of introducing new concept is often either too fast or too slow.	3.46	Often
3. All concepts are allotted the same amount of time whether they are easy or difficult to master.	3.26	Sometimes

4. It is difficult to sequence instruction to ensure that students acquire necessary pre-skills before introducing difficult skills.	3.59	Often
5.Many students fail to master important concepts	3.40	Sometimes
AWM	3.37	Sometimes

Legend

Rating	Mean Range	Descriptive Equivalent
5	4.21 - 5.00	Always (A)
4	3.41 - 4.20	Often (O)
3	2.61 - 3.40	Sometimes (S)
2	1.81 - 2.60	Rarely (R)
1	1.00 - 1.80	Not at All (NA)

Table 5b outlines the perceived disadvantages of implementing the Spiral Progression Approach in teaching Science, as reported by the teachers in Cabiao District. The table provides the mean scores for each indicator, with descriptive equivalents showing how often these disadvantages are observed in practice. The mean scores range from 3.13 to 3.59, indicating that these disadvantages are generally experienced "sometimes" to "often."

Does Not Promote Sufficient Review Once Units Are Completed. This indicator has a mean score of 3.13, categorized as "Sometimes." It suggests that teachers occasionally experience a lack of adequate review after completing units. In the Spiral Progression Approach, where concepts are revisited over time, the need for sufficient review after each unit is critical to reinforce understanding.

The Rate of Introducing New Concepts Is Often Either Too Fast or Too Slow. With a mean score of 3.46, this indicator falls under the "Often" category. This suggests that teachers frequently observe that the pace at which new concepts are introduced in the Spiral Progression Approach can sometimes be misaligned with students' learning needs.

All Concepts Are Allotted the Same Amount of Time, Whether They Are Easy or Difficult to Master. This indicator received a mean score of 3.26, which is classified as "Sometimes." It indicates that teachers occasionally perceive that all concepts, regardless of their difficulty level, are allotted the same amount of time.

It Is Difficult to Sequence Instruction to Ensure That Students Acquire Necessary Pre-skills Before Introducing Difficult Skills. With a mean score of 3.59, this indicator falls under the "Often" category. It suggests that teachers often find it challenging to sequence instruction effectively in the Spiral Progression Approach.

Many Students Fail to Master Important Concepts. This indicator, with a mean score of 3.40, falls under the "Sometimes" category. It indicates that teachers sometimes observe that many students fail to master essential concepts despite the revisitation strategy of the Spiral Progression Approach.

Average Weighted Mean. The average weighted mean for all the indicators is 3.37, which places it in the "Sometimes" category. This suggests that while the disadvantages of the Spiral Progression Approach are observed on occasion, they do not necessarily represent consistent or universal challenges.

Summary

This study aimed to assess the implementation of the Spiral Progression Approach in the teaching of Science in Cabiao District, Schools Division Office of Nueva Ecija, during the School Year 2024-2025. The study focused on the Science teachers' profile, the extent of implementation of the Spiral Progression Approach, its advantages and disadvantages, as well as the common teaching strategies employed. The findings revealed that the majority of Science teachers possessed advanced educational qualifications, with many holding Master's degrees or units, and a significant number had over a decade of teaching experience. Additionally, most teachers had attended relevant training, particularly at the regional and division levels.

In terms of the implementation of the spiral progression approach, the results indicated that the approach was generally implemented with some elements categorized as moderately implemented. Teachers frequently used research-based practices, provided a variety of learning experiences, and ensured the vertical articulation of competencies. However, certain aspects such as the use of highly academic universal standards and the exploration of integrative strategies for holistic development were moderately implemented. The study also identified several advantages of Spiral Progression Approach, such as allowing students to revisit concepts for mastery and development of cognitive skills. However, some disadvantages were noted, including the challenge of sequencing instruction and the potential for insufficient review of mastered concepts.

Conclusion

Based on the findings of the study, the following conclusions were drawn:

The implementation of the Spiral Progression Approach in Science teaching in the public secondary schools of Cabiao District is generally positive, with teachers actively integrating various teaching strategies and practices aligned with the approach's core principles. While many aspects of the approach are fully implemented, there are areas that need further attention, particularly in the use of universal academic standards and the integration of more interactive strategies for holistic development. The advantages of SPA in reinforcing students' cognitive abilities and ensuring the retention and mastery of concepts have been clearly demonstrated. However, the challenges such as pacing issues and ensuring the sufficient review of concepts point to areas where teachers may require further training and support.

Recommendations

1. It is recommended that Science teachers undergo additional professional development training focusing on the integration of highly academic standards and the exploration of more holistic and integrative strategies. This could help address the areas identified as moderately implemented and enhance the overall effectiveness of the Spiral Progression Approach.

2. Teachers should collaborate to refine and adapt the curriculum to ensure that all concepts are introduced at an appropriate pace, allowing students sufficient time to master the content. This could include more deliberate planning for vertical articulation and addressing the sequencing of instruction to ensure foundational concepts are solidified before introducing more complex topics.

3. Since the study revealed that the use of indigenous materials to reinforce learning was moderately implemented, it is recommended that teachers further integrate local resources to make the learning experience more relevant and culturally responsive, thereby enhancing student engagement.

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