SPIRAL PROGRESSION APPROACH AND ACADEMIC PERFORMANCE OF JUNIOR HIGH SCHOOL LEARNERS IN TAGBILARAN CITY DIVISION

Spiral Progression Approach and Academic Performance of Junior High School Learners in Tagbilaran City Division

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Abstract

This study evaluated the effectiveness of the spiral progression approach in teaching English, Science, and Mathematics (ENSCIMA) and its impact on the academic performance of junior high school learners in Tagbilaran City Division during the 2023–2024 school year. Recognizing the importance of academic performance as an indicator of educational system effectiveness, the research addressed gaps in implementing the spiral progression approach, particularly its alignment with Bruner's Learning Theory and the objectives of Republic Act 10533. The study employed a quantitative research design, analyzing quarterly assessment data from 377 students in five public high schools. Statistical methods, including descriptive and inferential analysis, were used to evaluate relationships between the effectiveness of the spiral progression approach, learners' profiles, and academic performance. Key findings revealed that while learners achieved "satisfactory" academic performance overall, the spiral progression approach was rated "fairly satisfactory" in English and "did not meet expectations" in Science and Mathematics. Strong correlations were found between the approach's effectiveness and academic performance in English ($rs = .767$, $p = .000$) and Mathematics ($rs = .774$, $p = .000$), with a moderately high correlation in Science ($rs = .690$, $p = .000$). These results highlighted significant deficiencies in mastering core competencies and a mismatch between curriculum design and practical implementation. The study's implications emphasize the need for curriculum revisions, targeted teacher training, and the development of student motivation programs to bridge gaps in academic achievement. The findings aim to support evidence-based reforms in the K–12 curriculum by addressing these issues, ensuring alignment with learners' needs, and fostering long-term educational success.

Keywords: *academic achievement, curriculum implementation, junior high school education, spiral progression method, and subject mastery*

INTRODUCTION

Students' academic performance serves as a vital indicator of an educational system's effectiveness. Despite the persistent efforts of the Department of Education (DepEd) in the Philippines to enhance learning outcomes, challenges remain, particularly in core subjects such as English, Science, and Mathematics. Parojenog and Pabalan (2024) reinforce this concern, aligning with the OECD's 2018 PISA Country Report for the Philippines, which noted that "fifteen-year-old learners in the Philippines performed worse in reading, mathematics, and science compared to their peers in most participating nations and economies." The 2018 Programme for International Student Assessment (PISA) further highlighted that Filipino students scored significantly below the OECD average in these subjects, ranking last among participating nations. Unfortunately, this trend continued in 2022, emphasizing the need for substantial educational policy and practice reforms to address these deficiencies (OECD, 2018; OECD, 2022).

Other international assessments further corroborate the challenges faced by the Philippine education system. In the 2019 Trends in International Mathematics and Science Study (TIMSS), Filipino fourth-grade students ranked last among 58 countries in both math and Science. Similarly, the 2019 Southeast Asia Primary Learning Metrics (SEA-PLM) revealed that fifth-grade students in the Philippines performed below the regional average in reading, writing, and mathematics (UNESCO Bangkok, 2022). At the national level, the National Achievement Test (NAT) results were equally concerning, with sixth-grade students scoring an average of 37.43% and tenth-grade students averaging

45.33%, both significantly below the minimum proficiency standard of 75% (DepEd Order No. 8, s. 2015). These findings point to systemic issues that hinder students' ability to attain academic excellence.

One approach to address these challenges is the spiral progression method, a central feature of the K–12 curriculum introduced under Republic Act 10533. This method promotes the mastery of knowledge through iterative revisitation of topics with increasing complexity. Grounded in Bruner's Learning Theory, the spiral progression approach emphasizes revisiting concepts to reinforce understanding and facilitate long-term retention (Bruner, 1960; Harden & Stamper, 1999). However, certain limitations in its implementation have been identified, including the rigid pacing of content delivery and insufficient time allocated for mastery, potentially hampering students' comprehension of foundational concepts (Snider, 2004). Additionally, misalignments in instruction, assessment, and curriculum design exacerbate these issues (DepEd, 2019; Corpuz, 2014).

Within the Tagbilaran City Division, these systemic issues are evident in the low academic performance of junior high school learners in English, Science, and Mathematics, as reflected in the School Monitoring Evaluation and Adjustment (SMEA) results. This study aims to assess the effectiveness of the spiral progression approach in improving academic outcomes in these subjects, focusing on learner performance during the first three quarters of the 2023–2024 school year. By drawing on Bruner's Discovery Learning Theory, which emphasizes the iterative deepening of knowledge, the research seeks to propose curricular enhancements that address identified gaps (Corpuz, 2014; Dowding, 1993; Johnson, 2015).

The findings of this study are expected to provide valuable insights into the strengths and limitations of the spiral progression approach. By addressing these challenges, the research aims to contribute to evidence-based strategies for improving academic achievement in critical subject areas. Ultimately, this study aspires to support the goals of Republic Act 10533 and Sustainable Development Goal 4, which emphasize inclusive, equitable, and quality education for all (UNESCO, 2021; DepEd Order No. 021, s. 2019). Through these efforts, Filipino students can be better equipped with the skills necessary for academic success and lifelong learning (Guskey, 2013; Otten et al., 2019).

Research Questions

This study aimed to determine the effectiveness of the spiral progression approach on the academic performance in English, Science, and Mathematics (ENSCIMA) of junior high school learners in Tagbilaran City Division. The research covered the first, second, and third quarters of the school year 2023–2024, with the ultimate objective of proposing a curricular enhancement program. Specifically, it sought to answer the following questions:

1. What is the profile of the learners in terms of sex and year level?
2. What is the level of effectiveness of the spiral progression approach based on the learners' performance in the quarterly assessment during the first, second, and third quarters in English, Science, and Mathematics?
3. What is the learners' academic performance level in English, Science, and mathematics during the first, second, and third quarters?
4. Is there a significant relationship between learners' profiles and the level of effectiveness of the spiral progression approach?
5. Is there a significant relationship between learners' profiles and their level of academic performance?
6. Is there a significant degree of relationship between the level of effectiveness of the spiral progression approach and the level of learners' academic performance?
7. What curricular enhancement program may be proposed based on the findings of the study?

METHODOLOGY

Research Design

The study is quantitative research. Previous studies have suggested that various variables can impact students' academic achievement. An analysis of students' academic records was employed to assess the effectiveness of the spiral progression approach based on academic performance. Utilizing

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academic records should emphasize offering constructive feedback and assistance for students' learning and growth. Instead of exclusively concentrating on pinpointing areas of weakness or deficiencies, educators and researchers should utilize academic data to offer tailored interventions and support resources that enable students to excel academically. Data analysis was performed using descriptive and inferential statistics. The study was conducted according to the DepEd K–12 Grading System, as outlined in DepEd Order No. 8, s. 2015.

Research Environment and Research Participants

This study was conducted in five public high schools within the Tagbilaran City Division, targeting 377 junior high school students from Grades 7 to 10. The participants were randomly selected, and the sample size was derived using Slovin's formula based on a total population of 6,418 students. The participating schools included Cogon National High School, Dr. Cecilio Putong National High School, Manga National High School, Mansasa National High School, and San Isidro National High School.

The inclusion criteria focused on public junior high schools offering regular classes for Grades 7 to 10. Schools with special programs were excluded, including Tagbilaran City Science High School due to its specialized curriculum, City of Tagbilaran National High School, which only had Grade 7 students, and Tagbilaran High School for the Hearing Impaired, which implements differentiated instruction.

The selected schools are strategically located across Tagbilaran City, ensuring a diverse and representative sample of junior high school learners.

Table1. Participants Distribution Table

Year Level/ School	Grade 7		Grade 8		Grade 9		Grade 10		TOTAL	
A	5		01		24		35		45	**6**
B	16	4	79	8	136	6	137	7	168	**45**
C	16	2	01	2	14	3	33	4	64	**1**
D	4		44		65	0	62		65	**3**
E	5		9		09		03		76	**2**
TOTAL	**386**	**1**	**514**	**9**	**748**	**03**	**770**	**04**	**418**	**77**

Research Instrument

This study used the transmutation table based on DepEd Order No. 8, S. 2015, to analyze students' academic records and test the effectiveness of the spiral progression approach in teaching English, Science, and Mathematics. The DepEd K–12 grading system evaluated students' academic performance in these subjects.

Data Analysis

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Data was retrieved, compiled, tabulated, and interpreted after the first, second, and third quarterly assessments. The study employed the following quantitative statistical treatment after testing the data with normality tests: Hence, the normality test results are below.

Normality Test for the Relationship between the Level of Effectiveness of the Spiral Progression Approach and Learners' Academic Performance.

The Shapiro-Wilk Test. This test was used to decide whether or not a sample fits a normal distribution. If the Sig. If the value of the Shapiro-Wilk test is more significant than 0.05, the data is standard. If it is below 0.05, the data significantly deviates from a normal distribution.

ENGLISH	Kolmogorov-Smirnov			Shapiro-Wilk			Results
	Statistic	df	Sig	Statistic	df	Sig	
English Academic Performance	0.065	377	0.001	0.984	377	0.000	Skewed
English Periodic Test	0.040	377	0.200*	0.994	377	0.118	Normal

The result of the normality test for English is skewed; therefore, Spearman's rho, a nonparametric statistical test, was used.

SCIENCE	Kolmogorov-Smirnov			Shapiro-Wilk			Results
	Statistic	df	Sig	Statistic	df	Sig	
Science Academic Performance	0.75	377	0.000	0.975	377	0.000	Skewed
Science Periodic Test	0.91	377	0.000	0.969	377	0.000	Skewed

The result of the normality test for Science is skewed; therefore, Spearman's rho, a nonparametric statistical test, was used.

MATHEMATICS	Kolmogorov-Smirnov			Shapiro-Wilk			Results
	Statistic	df	Sig	Statistic	df	Sig	
Math Academic Performance	0.87	377	0.000	0.961	377	0.000	Skewed
Math Periodic Test	0.60	377	0.000	0.984	377	0.000	Skewed

The result of the normality test for mathematics is skewed; therefore, Spearman's rho, a nonparametric statistical test, was utilized.

1. Frequency and Percentage: This test tabulated the profile of the respondents using frequency and Percentage.

2. Average or Mean: The average was employed to assess students' academic performance level. The academic performance was determined by computing the mean. It was analyzed according to the following scale based on the K–12 grading system.

Descriptor	Grading Scale	Remarks
Outstanding	90-100	Passed
Very Satisfactory	85-89	Passed
Satisfactory	80-84	Passed
Fairly Satisfactory	75-79	Passed
Did not meet Expectations	Below 75	Failed

The level of effectiveness of the spiral progression approach was determined by computing the mean and analyzed according to the following scale:

48 – Grading Scale, Score, and Remarks for English and Mathematics

Descriptor	Grading Scale	Score	Remarks
Outstanding	90-100	40 - 48	Passed
Very Satisfactory	85-89	36 – 39	Passed
Satisfactory	80-84	32 – 35	Passed
Fairly Satisfactory	75-79	28 -31	Passed
Did not meet Expectations	Below 75	0 - 27	Failed

40 – Grading Scale, Score, and Remarks for Science

Descriptor	Grading Scale	Score	Remarks
Outstanding	90-100	33 - 40	Passed
Very Satisfactory	85-89	30 – 32	Passed
Satisfactory	80-84	27 – 29	Passed
Fairly Satisfactory	75-79	24 -26	Passed
Did not meet Expectations	Below 75	0 – 23	Failed

1. **Chi-square Test for Independence:** This test was used to determine if there is a significant association between learners' profiles and their performance in English, Science, and Mathematics and also between learners' profiles and the level of effectiveness of the spiral progression approach.

2. **Spearman's rho.** The Spearman's rank-order correlation is the nonparametric version of the Pearson product-moment correlation. Spearman's correlation coefficient (ρ, also signified by rs) measures the strength and direction of association between two ranked variables. It will be used to evaluate the relationship between the effectiveness of the spiral progression approach and learners' academic performance.

To ascertain the correlation's interpretation, the following measuring device will be used to determine the strength of the relationship based on Bluman's correlation interpretation (Bluman, 2018).

Range	Qualitative Description
± 1	Perfect Relationship
± 0.75 to ± 0.99	Very High Relationship
± 0.50 to ± 0.74	Moderately High Relationship
± 0.25 to ± 0.49	Moderately Low Relationship
± 0.01 to ± 0.24	Very Low Relationship
0	No Correlation Relationship

Data Gathering Procedure

To collect the necessary data for the research study, the researcher obtained formal written approval and endorsement from the Vice President of the Academic Affairs Office and the Dean of the Graduate School. Furthermore, the researcher sought permission from the Schools Division Superintendent of Tagbilaran City Schools Division through a formal letter signed by the researcher, the research adviser, and the graduate school dean. Moreover, the researcher obtained permission from the school principal in each school through a formal letter signed by the researcher. The researcher gathered the English, Science, and Mathematics (ENSCIMA) quarterly assessment results and quarterly grades of grade 7 to grade 10 students from Quarter 1 to Quarter 3 of the school year 2023-2024. These data were obtained through their subject teachers.

Ethical Considerations

The UB Research Ethics Committee reviewed the research protocol before the study was conducted. This study strictly followed ethical considerations, and the protocol was observed correctly before initiating the research study. The researcher ensured the protection of participants' rights.

To uphold the principle of 'no harm' in the research, the researcher assigned random numbers to the selected students based on the class records of the subject teachers for gathering academic records. No student names appeared during data gathering to ensure data privacy. The researcher prioritized the confidentiality and privacy of the student's academic records. When collecting test scores in English, Science, and Mathematics, utmost care was taken to respect the privacy rights of each student, ensuring that their data were handled with caution. This involved implementing strong data security protocols to prevent unauthorized access or disclosure of sensitive information.

RESULTS

This chapter presents the data gathered from the participants, which was carefully analyzed using appropriate statistical analysis.

Table 2
Profile of the Participants in Terms of Sex
(n = 377)

	Frequency	Percentage (%)	Rank
Sex			
Male	198	52.52	1
Female	179	47.48	2
TOTAL	377	100	

The data reflect that out of the 377 participants, one hundred ninety-eight (198), or 52.52%, were males, and one hundred seventy-nine (179), or 47.48%, were females, indicating male dominance.

Male students hold the highest rank, indicating that the division of Tagbilaran City students predominantly comprises male students.

Table 3
Profile of the Participants in Terms of Year Level
(n = 377)

	Frequency	Percentage (%)	Rank
Year Level			
Grade 7	81	21.49	4
Grade 8	89	23.61	3
Grade 9	103	27.32	2
Grade 10	104	27.58	1
TOTAL	377	100	

Most participants, accounting for one hundred four (104) or 27.58%, were in grade 10. The second-largest group among the participants was in grade 9, which includes one hundred three (103) or 27.32%. The third group among the participants consisted of eighty-nine (89), or 23.61%, who were in grade 8, and the smallest group in frequency and Percentage was in grade 7, consisting of eighty-one (81), or 21.49%. Grade 10 is the dominant year level among the participants. This group holds the highest rank, indicating that grade 10 has the highest number of enrollees in the school year 2023-2024. It was also observed that the number of enrollees diminished from grade 10 to grade 7.

Table 4
Level of Effectiveness of the Spiral Progression Approach in English
(n = 377)

Descriptive Rating	Score	Frequency			Mean Percentage (%)	Remarks
		Q1	Q2	Q 3		
GRADE 7						
Outstanding	40 - 48	11	14	20	18.52	Passed

Very Satisfactory	36 – 39	15	16	11	17.28	Passed
Satisfactory	32 – 35	9	15	15	16.05	Passed
Fairly Satisfactory	28 -31	12	10	8	12.35	Passed
Did not meet Expectation	0 - 27	34	26	27	35.8	Failed
TOTAL		81	81	81	100	
	Mean Score	30			Fairly Satisfactory	
GRADE 8						
		Q1	Q2	Q 3		
Outstanding	40 - 48	5	11	4	7.49	Passed
Very Satisfactory	36 – 39	6	11	7	8.99	Passed
Satisfactory	32 – 35	14	11	8	12.36	Passed
Fairly Satisfactory	28 -31	17	22	21	22.47	Passed
Did not meet Expectation	0 - 27	47	34	49	48.69	Failed
TOTAL		89	89	89	100	
	Mean Score	27			Fairly Satisfactory	
GRADE 9						
		Q1	Q2	Q 3		
Outstanding	40 - 48	7	23	15	14.56	Passed
Very Satisfactory	36 – 39	11	23	19	17.15	Passed
Satisfactory	32 – 35	11	13	6	9.71	Passed
Fairly Satisfactory	28 -31	18	17	12	15.21	Passed
Did not meet Expectations	0 - 27	56	27	51	43.37	Failed
TOTAL		103	103	103	100	
	Mean Score	29			Fairly Satisfactory	
GRADE 10						
		Q1	Q2	Q 3		
Outstanding	40 - 48	6	10	10	8.33	Passed
Very Satisfactory	36 – 39	17	6	13	11.54	Passed
Satisfactory	32 – 35	14	12	17	13.78	Passed
Fairly Satisfactory	28 -31	17	22	18	18.27	Passed
Did not meet Expectation	0 - 27	50	54	46	48.08	Failed
TOTAL		104	104	104	100	
	Mean Score	28			Fairly Satisfactory	
OVERALL MEAN SCORE		29			FAIRLY SATISFACTORY	

Table 4 summarizes the effectiveness of the spiral progression approach in teaching English based on the quarterly assessment results for the first, second, and third quarters of the school year. The overall mean score was 29, interpreted as "fairly satisfactory." The data shows that 48.69% of Grade 8 students failed the quarterly assessment, 48.08% of Grade 10 students, 43.37% of Grade 9 students, and 35.8% of Grade 7 students. Grade 8 students recorded the highest Percentage of failures.

The results indicate that nearly half of the Grades 7 to 10 students failed to pass the quarterly English assessments. Furthermore, most passing students only achieved a "fairly satisfactory" performance level. These findings suggest that the spiral progression approach is less practical in teaching English, as evidenced by the low test scores across grade levels. While various factors may influence students' academic performance in English, the curriculum is a significant contributor.

This study aligns with Barrot's (2019) findings, emphasizing curriculum enhancements, particularly in specificity, internal consistency, and integrating key 21st-century learning and language teaching principles. Barrot's study also highlighted challenges in implementing the curriculum and proposed recommendations for improvement.

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Similarly, Alburo et al. (2019) identified gaps in the English curriculum, including a lack of clarity and insufficient integration of 21st-century learning principles within the Language Arts and Multiliteracies Curriculum (LAMC). Their study provided recommendations for curriculum revisions and underscored the importance of aligning the curriculum with modern language teaching and learning practices to address these issues effectively.

Table 5
Level of Effectiveness of the Spiral Progression Approach in Science
(n = 377)

Descriptive Rating	Score	Frequency			Mean Percentage (%)	Remarks
GRADE 7						
		Q1	Q2	Q3		
Outstanding	33 - 40	3	5	4	4. 94	Passed
Very Satisfactory	30 – 32	1	6	7	5.76	Passed
Satisfactory	27 – 29	1	11	7	7.82	Passed
Fairly Satisfactory	24 -26	11	11	8	12.35	Passed
Did not meet Expectations	0 – 23	65	48	55	69.14	Failed
TOTAL		81	81	81	100	
	Mean Score	20			Did not meet Expectation	
GRADE 8						
		Q1	Q2	Q 3		
Outstanding	33 - 40	4	3	9	5.99	Passed
Very Satisfactory	30 – 32	3	6	5	5.24	Passed
Satisfactory	27 – 29	5	7	14	9.74	Passed
Fairly Satisfactory	24 -26	12	20	3	13.11	Passed
Did not meet Expectation	0 – 23	65	53	58	65. 92	Failed
TOTAL		89	89	89	100	
	Mean Score	21			Did not meet Expectation	
GRADE 9						
		Q1	Q2	Q 3		
Outstanding	33 - 40	1	5	3	2. 91	Passed
Very Satisfactory	30 – 32	4	4	1	2. 91	Passed
Satisfactory	27 – 29	9	6	7	7.12	Passed
Fairly Satisfactory	24 -26	9	16	11	11.65	Passed
Did not meet Expectation	0 – 23	80	72	81	75.41	Failed
TOTAL		103	103	103	100	
	Mean Score	19			Did not meet Expectation	
GRADE 10						
		Q1	Q2	Q 3		
Outstanding	33 - 40	11	17	11	12.5	Passed
Very Satisfactory	30 – 32	5	8	7	6.41	Passed
Satisfactory	27 – 29	8	12	7	8.65	Passed
Fairly Satisfactory	24 -26	14	9	10	10.58	Passed
Did not meet Expectation	0 – 23	66	58	69	61.86	Failed
TOTAL		104	104	104	100	
	Mean Score	22			Did not meet Expectation	
OVERALL MEAN SCORE		21			DID NOT MEET EXPECTATION	

Table 5 reveals that the spiral progression approach in teaching science is ineffective, with a mean score of 21, categorized as "Did Not Meet Expectation." Failure rates were high, with 75.41% of Grade 9 students failing, followed by 69.14% in Grade 7, 65.92% in Grade 8, and 61.86% in Grade 10. Grade 9 recorded the highest Percentage of failures, indicating significant challenges in meeting expected learning outcomes.

The results suggest that the spiral progression approach does not sufficiently support students' learning in Science, with the curriculum itself identified as a critical factor. Resurrection and Adanza (2015) found that the spiral progression approach significantly affected the science curriculum, requiring teachers to adjust to its broad content and adopt new strategies. They noted that insufficient mastery of various science fields presented challenges, as teachers lacked the depth of knowledge for in-depth discussions.

Similarly, Garcia (2021) identified multiple factors influencing students' learning outcomes, with many Grades 10 students in Pasig City performing at a "fairly satisfactory" level under the spiral progression curriculum. However, Orbe et al. (2020) reported positive outcomes in chemistry, observing significant student achievements with varied results, highlighting the need for further study on implementation factors and contextual differences.

Table 6
Level Effectiveness of the Spiral Progression Approach in Mathematics
(n = 377)

Descriptive Rating	Score	Frequency			Mean Percentage	Remarks
GRADE 7						
		Q1	Q2	Q 3		
Outstanding	40 - 48	0	0	2	0.82	Passed
Very Satisfactory	36 – 39	1	3	0	1.65	Passed
Satisfactory	32 – 35	7	4	5	6.58	Passed
Fairly Satisfactory	28 -31	9	5	13	11.11	Passed
Did not meet Expectation	0 - 27	64	69	61	79.84	Failed
TOTAL		81	81	81	100	
	Mean Score	21			Did not meet Expectation	
GRADE 8						
		Q1	Q2	Q 3		
Outstanding	40 - 48	0	1	0	0.37	Passed
Very Satisfactory	36 – 39	2	6	1	3.37	Passed
Satisfactory	32 – 35	7	12	14	12.36	Passed
Fairly Satisfactory	28 -31	9	14	17	14. 98	Passed
Did not meet Expectation	0 - 27	71	56	57	68. 91	Failed
TOTAL		89	89	89	100	
	Mean Score	23			Did not meet Expectation	
GRADE 9						
		Q1	Q2	Q 3		
Outstanding	40 - 48	0	0	3	0. 97	Passed
Very Satisfactory	36 – 39	0	1	4	1.62	Passed
Satisfactory	32 – 35	0	7	7	4.53	Passed
Fairly Satisfactory	28 -31	3	7	17	8.74	Passed
Did not meet Expectation	0 - 27	100	88	72	84.14	Failed
TOTAL		103	103	103	100	
	Mean Score	20			Did not meet Expectation	
GRADE 10						
		Q1	Q2	Q 3		
Outstanding	40 - 48	4	0	6	3.21	Passed

Very Satisfactory	36 – 39	9	1	10	6.41	Passed
Satisfactory	32 – 35	13	5	12	9.62	Passed
Fairly Satisfactory	28 -31	18	13	8	12.5	Passed
Did not meet Expectation	0 - 27	60	85	68	68.27	Failed
TOTAL		104	104	104	100	
	Mean Score	24			Did not meet Expectation	
OVERALL MEAN SCORE		22			DID NOT MEET EXPECTATION	

Table 6 shows that the spiral progression approach in teaching mathematics is ineffective, with an overall mean score of 22, categorized as "Did Not Meet Expectations." Failure rates were alarmingly high, with 84.14% of Grade 9 students failing, followed by 79.84% in Grade 7, 68.91% in Grade 8, and 68.27% in Grade 10. Grade 9 students recorded the highest failure rate, highlighting significant challenges in achieving learning outcomes.

The findings suggest that the spiral progression approach in mathematics does not adequately support student learning, with the curriculum being a primary contributing factor. Dio (2020) noted that while the Philippine Spiral K–10 Mathematics Curriculum demonstrated increasing complexity, its design failed to address the congestion of content and learning competencies. Teachers reported a mismatch between the curriculum and the cognitive development of Filipino learners, prompting a recommendation to revise the curriculum by focusing on essential learning competencies aligned with international standards.

Amarilla (2019) similarly found that inadequate subject mastery among students was a significant challenge in implementing the spiral progression approach in mathematics. Meanwhile, Rico and Baluyos (2021) observed that although teachers effectively applied the approach, student performance in algebra remained low, further underscoring the need to reassess the curriculum's design and implementation.

Table 7
Level of Learners' Academic Performance in English
(n = 377)

Descriptive Rating	Grading Scale	Frequency			Mean Percentage %	Remarks
GRADE 7						
		Q1	Q2	Q 3		
Outstanding	90-100	14	17	21	21.40	Passed
Very Satisfactory	85-89	22	26	27	30.86	Passed
Satisfactory	80-84	20	18	19	23.46	Passed
Fairly Satisfactory	75-79	22	16	12	20.57	Passed
Did not meet Expectation	Below 75	3	4	2	3.70	Failed
TOTAL		81	81	81	100	
	Mean Grade	84			Satisfactory	
GRADE 8						
		Q1	Q2	Q 3		
Outstanding	90-100	7	10	9	9.74	Passed
Very Satisfactory	85-89	21	28	28	28.83	Passed
Satisfactory	80-84	34	29	29	34.46	Passed
Fairly Satisfactory	75-79	27	20	23	26.22	Passed
Did not meet Expectation	Below 75	0	2	0	0.75	Failed
TOTAL		89	89	89	100	
	Mean Grade	83			Satisfactory	
GRADE 9						

		Q1	Q2	Q 3		
Outstanding	90-100	19	39	29	28.16	Passed
Very Satisfactory	85-89	33	23	25	26.21	Passed
Satisfactory	80-84	25	20	24	22.33	Passed
Fairly Satisfactory	75-79	21	13	23	18.45	Passed
Did not meet Expectation	Below 75	5	8	2	4.85	Failed
TOTAL		103	103	103	100	
	Mean Grade	85			Very Satisfactory	
GRADE 10						
		Q1	Q2	Q 3		
Outstanding	90-100	21	19	28	21.79	Passed
Very Satisfactory	85-89	32	23	29	26.92	Passed
Satisfactory	80-84	32	36	25	29.81	Passed
Fairly Satisfactory	75-79	18	25	22	20.83	Passed
Did not meet Expectation	Below 75	1	1	0	0.64	Failed
TOTAL		104	104	104	100	
	Mean Grade	84			Satisfactory	
OVERALL MEAN GRADE		84			SATISFACTORY	

Table 7 shows learners' academic performance in English, with an overall mean grade of 84, interpreted as "satisfactory." Failure rates were low, with 4.85% of Grade 9 students receiving grades below 75, followed by 3.70% in Grade 7, 0.75% in Grade 8, and 0.64% in Grade 10. Grade 9 recorded the highest Percentage of failing grades, with five students failing in Quarter 1, eight in Quarter 2, and two in Quarter 3 out of 103 participants.

Although the failure rates are low, the results highlight the need for intervention to ensure alignment with the No Child Left Behind Act of 2001, which mandates high-quality education for all students. Teachers must provide remediation for learners with failing grades throughout the school year to ensure no student is left behind and all can advance to the next grade level.

Table 8
Level of Learners' Academic Performance in Science
(n = 377)

Descriptive Rating	Grading Scale	Frequency			Mean Percentage %	Remarks
GRADE 7						
		Q1	Q2	Q 3		
Outstanding	90-100	6	11	12	11.93	Passed
Very Satisfactory	85-89	19	22	23	26.33	Passed
Satisfactory	80-84	31	23	18	29.63	Passed
Fairly Satisfactory	75-79	25	25	26	31.28	Passed
Did not meet Expectation	Below 75	0	0	2	0.82	Failed
TOTAL		81	81	81	100	
	Mean Grade	82			Satisfactory	
GRADE 8						
		Q1	Q2	Q 3		
Outstanding	90-100	5	6	5	5.99	Passed
Very Satisfactory	85-89	13	20	13	17.23	Passed
Satisfactory	80-84	32	32	39	38.58	Passed
Fairly Satisfactory	75-79	37	31	32	37.45	Passed

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Did not meet Expectation	Below 75	2	0	0	0.75	Failed
TOTAL		89	89	89	100	
	Mean Grade	81			Satisfactory	
GRADE 9						
		Q1	Q2	Q 3		
Outstanding	90-100	5	8	14	8.74	Passed
Very Satisfactory	85-89	27	29	21	24.91	Passed
Satisfactory	80-84	34	42	36	36.25	Passed
Fairly Satisfactory	75-79	33	22	31	27.83	Passed
Did not meet Expectation	Below 75	4	2	1	2.27	Failed
TOTAL		103	103	103	100	
	Mean Grade	82			Satisfactory	
GRADE 10						
		Q1	Q2	Q 3		
Outstanding	90-100	13	14	25	16.67	Passed
Very Satisfactory	85-89	23	32	28	26.60	Passed
Satisfactory	80-84	33	27	30	28.85	Passed
Fairly Satisfactory	75-79	34	31	21	27.56	Passed
Did not meet Expectation	Below 75	1	0	0	0.32	Failed
TOTAL		104	104	104	100	
	Mean Grade	83			Satisfactory	
OVERALL MEAN GRADE		82			SATISFACTORY	

Table 8 reflects the academic performance of learners in Science, with an overall mean grade of 82, interpreted as "satisfactory." Failure rates were minimal, with 2.27% of Grade 9 students scoring below 75, followed by 0.82% in Grade 7, 0.75% in Grade 8, and 0.32% in Grade 10. Grade 9 recorded the highest Percentage of failing grades, with four students failing in Quarter 1, two in Quarter 2, and one in Quarter 3 out of 103 participants.

The findings align with the qualitative study of de Ramos-Samala (2018), which noted that the vertical alignment of the spiral progression approach supports better comprehension of scientific concepts, especially with in-depth reviews and collaborative learning. However, the results differ from Ely (2018), whose study on the mastery of chemistry competencies through the spiral progression approach revealed "average mastery" across all grade levels, with higher mastery levels observed in public, science, and city schools.

Similarly, Pacala (2023) emphasized the potential of the spiral progression approach to enhance academic performance, noting its benefits for student proficiency and opportunities for curriculum improvement. These contrasting findings highlight the variability in the effectiveness of the spiral progression approach in science education.

Table 9
Level of Learners' Academic Performance in Mathematics
(n = 377)

Descriptive Rating	Grading Scale	Frequency			Mean Percentage %	Remarks
GRADE 7						
		Q1	Q2	Q 3		
Outstanding	90-100	11	14	14	16.05	Passed
Very Satisfactory	85-89	14	14	16	18.11	Passed

Satisfactory	80-84	17	19	19	22.63	Passed
Fairly Satisfactory	75-79	39	34	28	41.56	Passed
Did not meet Expectation	Below 75	0	0	4	1.65	Failed
TOTAL		81	81	81	100	
	Mean Grade	81			Satisfactory	
GRADE 8						
		Q1	Q2	Q 3		
Outstanding	90-100	7	14	16	13.86	Passed
Very Satisfactory	85-89	14	17	17	17.98	Passed
Satisfactory	80-84	23	20	29	26.97	Passed
Fairly Satisfactory	75-79	43	37	27	40.07	Passed
Did not meet Expectation	Below 75	2	1	0	1.12	Failed
TOTAL		89	89	89	100	
	Mean Grade	81			Satisfactory	
GRADE 9						
		Q1	Q2	Q 3		
Outstanding	90-100	4	14	13	10.03	Passed
Very Satisfactory	85-89	22	21	27	22.65	Passed
Satisfactory	80-84	37	31	30	31.72	Passed
Fairly Satisfactory	75-79	39	33	29	32.69	Passed
Did not meet Expectation	Below 75	1	4	4	2.91	Failed
TOTAL		103	103	103	100	
	Mean Grade	82			Satisfactory	
GRADE 10						
		Q1	Q2	Q 3		
Outstanding	90-100	13	7	16	11.54	Passed
Very Satisfactory	85-89	29	30	29	28.21	Passed
Satisfactory	80-84	34	36	26	30.71	Passed
Fairly Satisfactory	75-79	28	31	33	29.49	Passed
Did not meet Expectation	Below 75	0	0	0	0	Failed
TOTAL		104	104	104	100	
	Mean Grade	82			Satisfactory	
OVERALL MEAN GRADE		82			SATISFACTORY	

Table 9 shows learners' academic performance in mathematics, with an overall mean grade of 82, interpreted as "satisfactory." Failure rates were low, with 2.91% of Grade 9 students scoring below 75, 1.65% in Grade 7, 1.12% in Grade 8, and no failing grades in Grade 10. Grade 9 had the highest percentage of failures, with one student failing in Quarter 1 and four failing in Quarters 2 and 3 out of 103 participants.

The findings align with Rico and Baluyos's (2021) study, which noted that while teachers effectively implemented the spiral progression approach, student performance in algebra remained below expectations.

Table 10
Relationship between Sex and Effectiveness Level of Spiral Progression Approach in English
n=377

	Chi-Square Value	P value	Remarks
English	10.701	0.03	Significant

Table 10 illustrates the relationship between sex and the effectiveness level of the spiral progression approach in learning English. The p-value of 0.03 is lower than the significance level of 0.05, which indicates a significant relationship between sex and the effectiveness level of the spiral

progression approach in learning English. The finding reveals a sex difference in how students respond to the spiral progression approach to learning English.

Table 10.1
Chi-Square Distribution Table for Sex and Effectiveness Level of Spiral Progression Approach in English
n=377

		DE	FS	S	VS	O	Total
Gender	Female	60	38	36	27	18	179
	Male	99	32	32	20	15	198
Total		159	70	68	47	33	377

The chi-square distribution table 10.1 highlights that female students exhibit a greater inclination towards the spiral progression approach to learning English than their male counterparts.

Table 11
Relationship between Sex and Effectiveness Level of Spiral Progression Approach in Science
n=377

	Chi-Square Value	P value	Remarks
Science	8.725	0.068	Not Significant

Table 11 presents the relationship between sex and the effectiveness level of the spiral progression approach in learning science. The p-value of 0.068 is more significant than the significance level of 0.05, indicating no significant relationship between sex and the effectiveness level of the spiral progression approach in learning science. The finding shows no sex difference in how students respond to the spiral progression approach to learning science.

Table 11.1
Chi-Square Distribution Table for Sex and Effectiveness Level of Spiral Progression Approach in Science
n=377

		DE	FS	S	VS	O	Total
Gender	Female	117	27	16	7	12	179
	Male	148	24	19	3	4	198
Total		265	51	35	10	16	377

The data presented in chi-square distribution table 11.1 indicate that female and male students respond similarly to the spiral progression approach to English language learning.

Table 12
Relationship between Sex and Effectiveness Level of Spiral Progression Approach in Mathematics
n=377

	Chi-Square Value	P value	Remarks
Math	9.365	0.050	Significant

Table 12 displays the relationship between sex and the effectiveness of the spiral progression approach to learning mathematics. An AA p-value of 0.05, equal to the significance level of 0.05, indicates a significant relationship between sex and the effectiveness level of the spiral progression approach. This finding suggests a sex difference in how students respond to the spiral progression approach to learning mathematics.

Table 12.1
Chi-Square Distribution Table for Sex and Effectiveness Level of Spiral Progression Approach in Mathematics
n=377

		DE	FS	S	VS	O	Total
Gender	Female	134	26	17	2	0	179

Male	169	19	7	2	1	198
Total	303	45	24	4	1	377

The chi-square distribution table 12.1 shows that female students exhibit a more positive response to the spiral progression approach to learning mathematics than their male counterparts.

Table 13
Relationship between Year Level and Effectiveness Level of Spiral Progression Approach in English
n=377

	Chi-Square Value	P value	Remarks
English	22.683	0.031	Significant

Table 13 displays the relationship between year level and the effectiveness level of the spiral progression approach in learning English. The result shows a p-value of 0.031, which is lower than the significance level of 0.05. This indicates a significant relationship between year level and the effectiveness level of the spiral progression approach, suggesting an association among grades 7, 8, 9, and 10 in learning English.

Table 13.1
Chi-Square Distribution Table for Year Level and Effectiveness Level of Spiral Progression Approach in English
n=377

		DE	FS	S	VS	O	Total
	Grade 7	26	12	13	19	11	81
Year	Grade 8	42	20	15	5	7	89
Level	Grade 9	43	17	19	16	8	103
	Grade 10	48	21	21	7	7	104
Total		159	70	68	47	33	377

In chi-square distribution table 13.1, notable patterns or trends across different year levels can be observed. The effectiveness of the spiral progression approach decreases as students move to higher grade levels in the English subject.

Table 14
Relationship between Year Level and Effectiveness Level of Spiral Progression Approach in Science
n=377

	Chi-Square Value	P value	Remarks
Science	15.162	0.233	Not Significant

Table 14 displays the relationship between the year and effectiveness levels of the spiral progression approach in learning science. The result shows a p-value of 0.233, more significant than the significance level of 0.05. This indicates an insignificant relationship between year level and the effectiveness level of the spiral progression approach, suggesting no association among grades 7, 8, 9, and 10 in learning science. This means that there is no significant connection between the grades or levels of students and how well the spiral progression approach works for them in learning Science.

Table 14.1
Chi-Square Distribution Table for Year Level and Effectiveness Level of Spiral Progression Approach in Science
n=377

		DE	FS	S	VS	O	Total
	Grade 7	57	11	8	2	3	81
Year	Grade 8	62	10	10	3	4	89
Level	Grade 9	81	15	5	2	0	103
	Grade 10	65	15	12	3	9	104
Total		265	51	35	1	16	377

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In chi-square distribution table 14.1, no notable pattern or trend is observed across different year levels.

Table 15
Relationship between Year Level and Effectiveness Level of Spiral Progression Approach in Mathematics
n=377

	Chi-Square Value	P value	Remarks
Math	27.415	0.007	Significant

Table 15 displays the relationship between year and effectiveness levels of the spiral progression approach to learning mathematics. The result shows a p-value of 007, which is lower than the significance level of 0.05. This indicates a significant relationship between year level and the effectiveness level of the spiral progression approach, suggesting an association among grades 7, 8, 9, and 10 in learning mathematics. This means there is a significant connection between the grades or levels of students and how well the spiral progression approach works for them in mathematics.

Table 15.1
Chi-Square Distribution Table for Year Level and Effectiveness Level of Spiral Progression Approach in Mathematics
n=377

		DE	FS	S	VS	O	Total
	Grade 7	67	9	4	1	0	81
Year	Grade 8	65	18	4	2	0	89
Level	Grade 9	96	2	5	0	0	103
	Grade 10	75	16	11	1	1	104
Total		303	45	24	4	1	377

In chi-square distribution table 15.1, a noticeable pattern or trend can be discerned across various year levels.

The result of the study agrees with the quantitative study of Olivia's 2023 study on the effectiveness of the spiral progression approach in teaching junior high school mathematics in Zambales, Philippines. Findings showed that student-respondents rated their academic performance as satisfactory. The students perceived the spiral progression approach as effective, with a highly significant relationship observed among 7th to 10th-grade students and a moderately significant relationship among 8th and 9th-grade students between the effectiveness of the spiral progression approach and academic performance in mathematics.

Table 16
Relationship between Sex and Learners' Level of Academic Performance in English
n=377

	Chi-Square Value	P value	Remarks
English	31.844	0.00	Significant

Table 16 illustrates the relationship between sex and the level of academic performance in English. It obtained a p-value of 0.00, which is lower than the significance level of 0.05. The result suggests a significant relationship between sex and the level of academic performance of students in English.

Table 16.1
Chi-Square Distribution Table for Sex and Learners' Level of Academic Performance in English
n=377

		DE	FS	S	VS	O	Total
Gender	Female	2	21	47	63	46	179
	Male	5	52	75	44	22	198
Total		7	73	122	107	68	377

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The result implies that sex is related to students' academic performance, as evidenced by the chi-square distribution table 16.1, which shows that females perform better than males.

Table 17
Relationship between Sex and Learners' Level of Academic Performance in Science
n=377

	Chi-Square Value	P value	Remarks
Science	27.497	0.00	Significant

Table 17 depicts the correlation between sex and academic performance levels in Science. It obtained a p-value of 0.00, which is lower than the significance level of 0.05. This indicates a significant association between gender and students' academic performance in Science.

Table 17.1
Chi-Square Distribution Table for Sex and Learners' Level of Academic Performance in Science
n=377

		DE	FS	S	VS	O	Total
Gender	Female	1	34	66	55	23	179
	Male	4	78	69	38	9	198
Total		5	112	135	93	32	377

The findings suggest that sex influences students' academic achievements, as demonstrated in chi-square distribution table 17.1, where females outperform males.

Table 18
Relationship between Sex and Learners' Level of Academic Performance in Mathematics
n=377

	Chi-Square Value	P value	Remarks
Math	18.872	0.001	Significant

Table 18 illustrates the relationship between sex and the level of academic performance in Mathematics. It yielded a p-value of 0.01, which is lower than the significance level of 0.05. The result suggests a significant relationship between sex and the level of academic performance among students in Mathematics.

Table 18.1
Chi-Square Distribution Table for Sex and Learners' Level of Academic Performance in Mathematics
n=377

		DE	FS	S	VS	O	Total
Gender	Female	1	50	51	50	27	179
	Male	6	84	55	42	11	198
Total		7	134	106	92	38	377

The result implies that sex is related to student's academic performance, as evidenced by chi-square distribution table 18.1, which shows that females outperformed males.

Table 19
Relationship between Year Level and Learners' Level of Academic Performance in English
n=377

	Chi-Square Value	P value	Remarks
English	32.382	0.001	Significant

Table 19 shows the relationship between year level and the level of learners' academic performance in English. The result obtained a p-value of 0.01, which is lower than the significance level

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of 0.05. This indicates a significant relationship between year level and learners' academic performance in English, suggesting an association among grades 7, 8, 9, and 10.

Table 19.1
Chi-Square Distribution Table for Sex and Learners' Level of Academic Performance in English
n=377

		DE	FS	S	VS	O	Total
	Grade 7	4	17	18	30	12	81
Year	Grade 8	0	20	39	24	6	89
Level	Grade 9	3	15	30	26	29	103
	Grade 10	0	21	35	27	21	104
Total		7	73	122	107	68	377

This means that there is a meaningful connection between students' grade levels and their academic performance in English, as evidenced by chi-square distribution table 19.1. Specifically, it suggests that there is a relationship between different grade levels (grades 7, 8, 9, and 10) and how students perform academically in English.

Table 20
Relationship between Year Level and Learners' Level of Academic Performance in Science
n=377

	Chi-Square Value	P value	Remarks
Science	23.867	0.021	Significant

Table 20 displays the correlation between students' grade levels and their academic performance in Science. The result shows a p-value of 0.021, falling below the significance p-value of 0.05. This suggests a noteworthy connection between students' year levels and their academic performance in Science, implying a link among grades 7, 8, 9, and 10.

Table 20.1
Chi-Square Distribution Table for Sex and Learners' Level of Academic Performance in Science
n=377

		DE	FS	S	VS	O	Total
	Grade 7	0	24	28	22	7	81
Year	Grade 8	1	35	32	18	3	89
Level	Grade 9	4	26	44	22	7	103
	Grade 10	0	27	31	31	15	104
Total		5	112	135	93	32	377

This means that there is a meaningful connection between students' grade level and their academic performance in Science, as evidenced by chi-square distribution table 20.1. Specifically, it suggests a relationship between different grade levels (grades 7, 8, 9, and 10) and how students perform academically in Science.

Table 21
Relationship between Year Level and Learners' Level of Academic Performance Mathematics
n=377

	Chi-Square Value	P value	Remarks
Math	15.946	0.194	Not Significant

Table 21.1
Chi-Square Distribution Table for Sex and Learners' Level of Academic Performance in Mathematics
n=377

		DE	FS	S	VS	O	Total
Year	Grade 7	1	33	20	15	12	81
Level	Grade 8	2	34	23	22	8	89

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Grade 9	4	35	35	20	9	103
Grade 10	0	32	28	35	9	104
Total	7	134	106	92	38	377

Table 21 shows the relationship between year level and the level of academic performance of students in Mathematics. The result obtained a p-value of 0.194, more significant than the significance p-value level of 0.05. This indicates an insignificant relationship between year level and students' academic performance in Mathematics. This means there is not a meaningful or statistically significant connection between the grades or levels of students (year level) and how well they perform academically in mathematics. In other words, factors such as grade level do not noticeably impact students' academic performance in Mathematics.

Table 22
Relationship between the level of effectiveness of the Spiral Progression Approach and learners' academic performance in English
n=377

Subject	Test	rs value	Description	p-value	Interpretation
English	Spearman's rho	0.767	Very High Relationship	0.000	Significant

The result of the normality test for English is skewed; therefore, Spearman's rho, a nonparametric statistical test, was used.

ENGLISH	Kolmogorov-Smirnov			Shapiro-Wilk			Results
	Statistic	df	Sig	Statistic	df	Sig	
English Academic Performance	0.065	377	0.001	0.984	377	0.000	Skewed
English Periodic Test	0.040	377	0.200*	0.994	377	0.118	Normal

Table 22 illustrates the relationship between the level of effectiveness of the spiral progression approach and learners' academic performance in English. It shows a "very high relationship" correlation, with a Pearson r-value of 0.767 and a p-value of 0.000. The result implies that the effectiveness of the spiral progression approach dramatically affects students' academic performance in English. It is evident from the results that poor quarterly assessments of students lead to poor academic performance in English.

The study's results agree with Barrot's study, which indicated that enhancements are necessary for the existing curriculum, particularly in terms of specificity, internal consistency, and the incorporation of key principles related to 21st-century learning and language teaching and learning. The paper concludes by addressing potential challenges in implementing the curriculum, providing recommendations for future design and implementation, and discussing implications for subsequent studies (Barrot, 2019).

Table 23
Relationship between the level of effectiveness of the Spiral Progression Approach and learners' academic performance in Science
n=377

Subject	Test	rs value	Description	p-value	Interpretation
Science	Spearman's rho	0.690	Moderately High Relationship	0.000	Significant

The result of the normality test for Science is skewed; therefore, Spearman's rho, which is a nonparametric statistical test, was used.

SCIENCE	Kolmogorov-Smirnov			Shapiro-Wilk			Results
	Statistic	df	Sig	Statistic	df	Sig	
Science Academic Performance	0.75	377	0.000	0.975	377	0.000	Skewed
Science Periodic Test	0.91	377	0.000	0.969	377	0.000	Skewed

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Table 23 shows a "moderately high relationship" between the effectiveness of the spiral progression approach and learners' academic performance in Science, with a Spearman's rho value of 0.767 and a p-value of 0.000. This indicates that the effectiveness of the spiral progression approach significantly influences students' academic performance. Poor quarterly assessments are closely linked to poor academic outcomes in Science.

The findings align with Fishbein et al. (2019), who, using TIMSS data, identified challenges faced by students in countries emphasizing the spiral progression approach, particularly regarding unsuitable or overly complex tasks in digital assessments. However, the results contradict the study by Tirol (2022), which described the spiral curriculum as learner-centered, intelligent, and progressive rather than extensive and overly concentrated.

Table 24
Relationship between the level of effectiveness of the Spiral Progression Approach and learners' academic performance in Mathematics
n=377

Subject	Test	rs value	Description	p-value	Interpretation
Mathematics	Spearman's rho	0.774	Very High Relationship	0.000	Significant

The result of the normality test for Mathematics is skewed; therefore, Spearman's rho, a nonparametric statistical test, was utilized.

MATHEMATICS	Kolmogorov-Smirnov			Shapiro-Wilk			Results
	Statistic	df	Sig	Statistic	Df	Sig	
Math Academic Performance	0.87	377	0.000	0.961	377	0.000	Skewed
Math Periodic Test	0.60	377	0.000	0.984	377	0.000	Skewed

Table 24 indicates a "very high relationship" between the effectiveness of the spiral progression approach and learners' academic performance in mathematics, with a Spearman's rho value of 0.774 and a p-value of 0.000. This suggests that the approach's effectiveness significantly impacts students' academic outcomes, as poor quarterly assessments lead to lower performance in mathematics.

The findings align with Camara's (2020) study, which reported that many Filipino students felt the spiral progression approach did not enhance their mastery of math and science content, affecting their college proficiency. Similarly, Manalo and Yazon (2020) found a strong correlation between implementing the spiral progression approach and student achievements in Science and mathematics.

Under the K–12 grading system, quarterly assessments account for 20% of student's academic performance in mathematics, while written works and performance tasks account for 40% each. Students can still pass academically even if their quarterly assessment scores are low, provided they perform well in other components.

Findings

On the Profile of the Respondents

The respondents' profiles were based on the following factors: sex and year level.

Sex. The male group of students holds the highest rank, indicating that the Tagbilaran City student division predominantly comprises male students.

Year Level. Grade 10 is the dominant grade level among the participants. This group holds the highest rank, indicating that grade 10 has the highest number of enrollees in the school year 2023-2024. It was also observed that the number of enrollees diminished from grade 10 to grade 7.

On the Level of Effectiveness of the Spiral Progression Approach

In English, the effectiveness level of the spiral progression approach in teaching English, based on the quarterly assessment results of students during the first, second, and third quarters of the school year, garnered an overall mean score of 29 with an interpretation of "fairly satisfactory."

In Science, Based on the quarterly assessment results, the quarterly assessment results showed that the spiral progression approach had a score of 21 and an interpretation of "Did Not Meet Expectation

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In mathematics, the quarterly assessment results showed that the effectiveness of the spiral progression approach in teaching mathematics got an overall mean score of 22, with an interpretation that "did not meet expectations."

On Level of Learners' Academic Performance

In English, the level of learners' academic performance in English achieved an overall mean grade of 84, with an interpretation of "satisfactory."

In Science, the learners' academic performance level received an overall mean grade of 82, which is interpreted as "satisfactory."

In Mathematics, the level of learners' academic performance reached an overall mean grade of 82, which is interpreted as "satisfactory."

On Relationship between Learners' Profile and Level of Effectiveness of the Spiral Progression Approach

Sex and Effectiveness Level of Spiral Progression Approach.

In English. The p-value of 0.03 is lower than the significance level of 0.05, which indicates a significant relationship between sex and the effectiveness level of the spiral progression approach in learning English. The finding reveals a sex difference in how students respond to the spiral progression approach to learning English.

In Science. The p-value of 0.068 is more significant than the significance level of 0.05, indicating no significant relationship between sex and the effectiveness level of the spiral progression approach in learning science. The finding shows no sex difference in how students respond to the spiral progression approach to learning science.

In Mathematics, a p-value of 0.05, equal to the significance level of 0.05, indicates a significant relationship between sex and the effectiveness of the spiral progression approach in learning mathematics. This finding suggests a sex difference in how students respond to the spiral progression approach to learning mathematics.

Year Level and Effectiveness Level of Spiral Progression Approach.

In English, the relationship between year level and the effectiveness level of the spiral progression approach in learning English had a p-value of 0.031, which is lower than the significance level of 0.05. This indicates a significant relationship between year level and the effectiveness level of the spiral progression approach, suggesting an association among grades 7, 8, 9, and 10 in learning English.

In Science. The relationship between the year level and the effectiveness level of the spiral progression approach in learning science arrived at a p-value result of 0.233, which is greater than the significance level of 0.05. This indicates an insignificant relationship between year level and the effectiveness level of the spiral progression approach, suggesting no association among grades 7, 8, 9, and 10 in learning science.

In Mathematics. The relationship between the year level and the effectiveness level of the spiral progression approach in learning mathematics achieved a p-value of 0.007, which is lower than the significance level of 0.05. This indicates a significant relationship between year level and the effectiveness level of the spiral progression approach, suggesting an association among grades 7, 8, 9, and 10 in learning mathematics. This means there is a significant connection between the grades or levels of students and how well the spiral progression approach works for them in mathematics.

On Relationship between Learners' Profile and Level of Academic Performance

Sex and Level of Learners' Academic Performance

In English. The relationship between sex and the level of learners' academic performance in English obtained a p-value of 0.00, which is lower than the significance level of 0.05. The result suggests a significant relationship between sex and the level of academic performance of students in English.

The result implies that sex is related to the academic performance of students, which shows that females perform better than males.

In Science. The correlation between sex and the level of learners' academic performance in Science got a p-value result of 0.00, which is lower than the significance level of 0.05. This indicates a significant association between sex and learners' academic performance in Science.

In Mathematics. The relationship between sex and the level of learners' academic performance in mathematics yielded a p-value of 0.01, which is lower than the significance level of 0.05. The result suggests a significant relationship between sex and the level of academic performance among learners in mathematics. The result implies that sex is related to the academic performance of students, which shows that females outperformed males.

Year Level and Learners' Academic Performance

In English. The relationship between year level and the level of learners' academic performance in English obtained a p-value of 0.01, which is lower than the significance level of 0.05. This indicates a significant relationship between year level and learners' academic performance in English, suggesting an association among grades 7, 8, 9, and 10.

In Science, the correlation between students' year level and academic performance achieved a p-value of 0.021, falling below the significance p-value of 0.05. This suggests a noteworthy connection between students' year levels and their academic performance in Science, implying a link among grades 7, 8, 9, and 10.

In Mathematics. The relationship between year level and the academic performance of students in mathematics got a p-value of 0.194, which is greater than the significance p-value level of 0.05. This indicates an insignificant relationship between year level and students' academic performance in mathematics.

Relationship between the level of effectiveness of the spiral progression approach and learners' academic performance

In English. The relationship between the level of effectiveness of the Spiral Progression Approach and learners' academic performance in English shows a "very high relationship" correlation, with a Pearson r value of 0.767 and a p-value of 0.000. The result implies that the effectiveness of the spiral progression approach greatly affects students' academic performance in English. It is evident from the results that poor quarterly assessments of students lead to poor academic performance in English.

In Science, the relationship between the effectiveness of the spiral progression approach and learners' academic performance shows a "moderately high relationship" correlation, with a Spearman's rho value of 0.690 and a p-value of 0.000. The result implies that the effectiveness of the spiral progression approach greatly affects students' academic performance in Science.

In Mathematics, the relationship between the effectiveness of the spiral progression approach and learners' academic performance in mathematics got a "very high relationship" correlation, with a Spearman's rho value of 0.774 and a p-value of 0.000. The result implies that the spiral progression approach's effectiveness greatly affects students' academic performance in mathematics.

Conclusion

The study concludes that the spiral progression approach is largely ineffective, as evidenced by high failure rates in English, Science, and Mathematics quarterly assessments across Grades 7 to 10. The study identified a very high correlation between the effectiveness of this approach and academic performance in English (rs = .767, p = .000) and Mathematics (rs = .774, p = .000). A moderately high correlation in Science (rs = .690, p = .000). These results indicate that the effectiveness of the spiral progression approach, primarily assessed through quarterly tests, significantly impacts learners' academic performance in these subjects. Poor performance in quarterly assessments correlates with overall poor academic outcomes.

While academic failure rates are relatively low, most students achieved only a "fairly satisfactory" level in their overall academic performance. This raises concerns about the approach's ability to support mastery of knowledge and skills as intended. Additionally, under the K–12 grading system, quarterly assessments account for only 20% of a student's overall grade, while written works and performance tasks constitute the remaining 80%. This grading structure allows students to pass academically despite poor quarterly assessment scores, further questioning the effectiveness of quarterly tests as a measure of mastery.

The findings also suggest that despite being grounded in Bruner's theory of learning, the spiral progression approach has not achieved its intended outcomes. While the theory emphasizes revisiting topics and gradually increasing complexity, implementation challenges have rendered the approach ineffective. The disconnect between theory and application is reflected in students' consistent underperformance across all three subjects.

Moreover, the study highlights that the spiral progression approach has not fully met the objectives outlined in Republic Act 10533, the "Enhanced Basic Education Act" in the Philippines. This legislation mandated using the spiral progression method to ensure mastery of knowledge and skills by progressively increasing complexity from one grade level to the next. The findings suggest that significant curriculum revisions and implementation are necessary to bridge the gap between policy objectives and actual student outcomes.

Recommendations

Anchored on the findings and conclusions mentioned earlier, the following recommendations are offered:

1. Information should be disseminated on the study results to the school division superintendent, school heads, teachers, and stakeholders of the junior high school in Tagbilaran City Division.
2. An awareness orientation aimed at enhancing students' academic performance in English, Science, and mathematics should be conducted to cultivate students' interest and motivation. This activity could enlighten students about the importance of English, Science, and mathematics.
3. Each junior high school within the Tagbilaran City Division should have an English, Science, and Math club organization aimed at enhancing learners' motivation to study ENSCIMA.
4. A school-based English, Science, and mathematics competition should be conducted to enhance learners' interest in these subjects.
5. A further follow-up study will be conducted using a survey questionnaire and interviews to gather insights and perceptions from teachers and students regarding the effectiveness of the spiral progression approach in teaching English, Science, and mathematics.

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