



Writing Skills Applying the Spiral Curriculum Method for High School Students



Michelle Flor Cajamarca-Ortiz ^a

Manuscript submitted: 09 October 2022, Manuscript revised: 18 November 2022, Accepted for publication: 27 December 2022

Corresponding Author ^a



Keywords

*experimental study;
high school students;
methodology;
spiral curriculum;
writing skills;*

Abstract

Given the deficient levels of argumentative writing identified in the students, the research carried out aimed to determine the impact of the spiral curriculum methodology on the writing skills of high school students, working as an experimental study, a quasi-experimental design. with a non-probabilistic sample, with two independent groups, made up of twenty-one students for the experimental and control groups, to whom a pretest and posttest in academic writing were applied, to measure the initial and post-experience level, in the students of the study groups; The collected data were processed with the use of descriptive and inferential statistics, where when having non-normal data, according to the Shapiro-Wilk normality test, the Mann Whitney U was used through the SPSS program, where a value was obtained as a result. $p < 0.01$ with significant differences between the pre and post-test, in favor of the latter, reaching the conclusion that the methodology of the in-spiral curriculum has a positive and significant impact on strengthening students' writing skills, validating the research hypothesis.

International Journal of Social Sciences and Humanities © 2023.

This is an open access article under the CC BY-NC-ND license

(<https://creativecommons.org/licenses/by-nc-nd/4.0/>).

Contents

Abstract.....	1
1 Introduction	2
2 Materials and Methods.....	3
3 Results and Discussions.....	3
4 Conclusion.....	11
Acknowledgments	11
References.....	11
Biography of Authors.....	13

^a Universidad César Vallejo, Peru

1 Introduction

The current reality of education is very complex to the extent that students must develop written thinking skills, for this the curricular structures applied by educational institutions are becoming stronger, looking for students to develop their reading and writing skills with greater efficiency. In this sense, [UNICEF \(2019\)](#), mentions that currently, more than one billion children receive classes in educational centers, but the serious deficiencies in the school units make the teaching processes very difficult, the same can be from The structure, didactic materials, adequate methodologies and teacher training make students have many difficulties in learning, especially in basic skills such as reading, and in writing such as dictation and writing texts. According to a study carried out by the World Bank in alliance with UNICEF, it mentions that more than 60% of students who are finishing their primary level in Latin America do not achieve adequate text comprehension skills, nor do they develop adequate writing the most common difficulties, the limited writing of ideas, and the union of sentences in a logical context, this situation has increased due to the effect of the pandemic that has greatly restricted education, on the other hand, children cannot adequately understand the texts being This is a problem that educational institutions address with different actions such as the application of curricular structures and innovative teaching processes. [\(UNESCO, 1981\)](#).

According to [Madrid Tamayo \(2019\)](#), he mentions that the educational problem in Ecuador is very broad, due to the various difficulties faced by the educational system, the Ministry of Education is the institution in charge of ensuring a solid education of students, but there are various deficiencies regarding the current curricular structures and the capacities of teachers to be able to apply them. [Mendoza Velazco et al. \(2019\)](#), confirm that more than fifty percent of students fail to develop adequate writing, so specialized programs are being developed in order to address this problem. It has been observed that, in an educational institution in the province of Guayas, students in the second and third years of high school have weaknesses when writing their argumentative essays, where they are fearful when putting their ideas on paper. This situation is repetitive in the last year for both students and teachers because when they are in the third year of high school, students carry out different research activities, which entails demonstrating in writing what they investigated and that is where the difficulty for students arises. . At the end of their secondary education they must prepare reports and monographs, these activities allow them to observe and demonstrate the ability to write.

The research addresses theoretical needs such as identifying important aspects of the spiral curriculum method and writing skills, to expand them and investigate other authors who describe both variables, theories, definitions, and dimensions, among others. Likewise, the practical justification of the present study favors and determines the effectiveness of spiral curriculum learning, evidencing itself in the strengthening of writing skills to later become an application guide in other fields and investigations; In the same way, this research in the methodological aspect will allow the implementation of spiral curriculum methods through teaching practice through the effective use of the strategies and principles of this teaching model, which will be validated with the results obtained in implemented experience [\(Lam, 2013; Khair & Misnawati, 2022; Ariyanfar & Mitchell, 2020\)](#).

Likewise, it is called the operations segment of the investigation in order to verify hypotheses and obtain results, to finally contrast and discuss them. The general objective of the research was to determine the impact of the spiral curriculum methodology on the writing skills of Guayas High School students, in 2022, which implies diagnosing the level of development of writing skills in the experimental and control groups, before the implementation of the spiral curriculum method to then determine the level of efficiency of the implementation of the enactive, iconic and symbolic dimensions of spiral learning proposed by Bruner since 1996 and in this study, it is applied to the writing skills of the students of the experimental group and control of the Baccalaureate, Guayas - Ecuador. This leads to measuring the level of development of writing skills in the experimental and control groups, after the implementation of the spiral learning method [\(Huber et al., 2020; Fahimi & Rahimi, 2015; Ghaffar et al., 2020\)](#).

2 Materials and Methods

For this development, the general hypothesis is presented: the implementation of the spiral curriculum method has a positive and significant impact on strengthening the writing skills of the students of Guayas High School 2022. Thus, the specific hypotheses affirm that: H1: The level of development of writing skills in the experimental and control groups is similar, before the implementation of the spiral curriculum method. H2: The level of efficiency of the implementation of the enactive, iconic and symbolic dimensions of the spiral curriculum is significant in the development of the writing skills of the students of the experimental and control group in the Baccalaureate, Guayas -2022. H3: The level of development of writing skills in the experimental groups is significant compared to the control group, after the implementation of the spiral curriculum method.

It is applied research, also known as experimental, as indicated by [Esteban \(2018\)](#), this type of research seeks to propose a solution to an identified problem, such as attention to the needs of the beneficiary population of this research. The research had a quantitative approach, according to [Pereyra \(2022\)](#), which is a type of study that use numerical data to obtain and analyze the natural phenomena investigated. The research applied a quasi-experimental design, which is defined by [Rojas \(2021\)](#), indicating that this type of research seeks to define the way in which a certain sample reacts to the treatments applied to the study groups, both control and study groups. experimental, analyzing the effects or reactions that occur in this process.

Spiral curriculum methodology According to [Bruner \(2018\)](#), the conceptualization of the spiral curriculum methodology is one in which there is an iterative review of topics or themes through the curriculum, which does not consist of the mere "repetition of themes" , but in the deepening of the same, and in its greater breadth each time the topic is treated since it is built on what has been reviewed, with which the mastery of the connections and the structure of a great body of knowledge is achieved, skills and attitudes. The variable was evaluated through an academic writing test with 5 evaluation criteria. It presents as dimensions: Enactive (Indicator: -Understanding and apprehension of their environment), Iconic (Indicator: Internal Representations) and Symbolic (Indicator: Mental retention and Classification and ordering). The scale of the instrument will be Likert with levels 10 - 9 (Outstanding Achievement), 8 - 7 (Expected Achievement), 6 - 5 (Process) and 4 - 00 (Start).

Writing skills; As indicated by [Silva & Valdez \(2017\)](#), writing skills are the activity through which we express certain ideas, knowledge, etc., through graphic signs. Operationally, it was evaluated through an academic writing test with 5 evaluation criteria. It is presented as dimensions: Relevance and solidity (Indicators: -Demonstrates knowledge of the theme developed. - Discerns what information is adequate to develop the theme. - Uses solid and coherent information. - Complements the development of the theme with own ideas) Organization of the content (Indicators: -Develops the information according to the proposed scheme. - Presents a text with an introduction development-closure. - Presents logical order in the development of their ideas) Lexical-grammatical competence (Indicators: -Constructs grammatically correct simple and complex sentences. - Presents an adequate use of cohesive elements (references and logical connectors). - Uses the formal register appropriately) Punctuation (Indicators: -Uses full stop and full stop, and full stop correctly. -Uses commas appropriately (circumstantial, enumerative, explanatory movement and logical connectors) and Spelling (Indicators: - 5 more errors - 4 errors - 3 errors - 0 to 2 errors. The measurement scale was Likert with the following levels: 10 - 9 (Outstanding achievement), 8 - 7 (Expected achievement), 6 - 5 (Process), and 4 - 00 (Start).

3 Results and Discussions

This research was carried out on third-year high school students from the Millennium Vera Educational Unit, which consists of 6 parallels, totaling 133 students. This population is also called the statistical population, which is the set of all the measurements of the variables under study, in each of the units of the universe; that is, it is the set of values that each variable takes in the units that make up the universe ([Pastor, 2019](#)). [Hernández-Sampieri et al. \(2017\)](#), the sample will be made up of third-year high school students, it has 6 parallels, of which they are called A, B, C, D, E and F. They all have the same characteristics in reference to the problem of research, two of these parallels have the same number of students, so they will be the sample for

the development of the study presented, the population in pre and post test is the same number and consists of 21 students. According to [Hernández-Ávila & Escobar \(2019\)](#), non-probabilistic sampling seeks to select the members of a sample in a non-random way, being able to have only the researcher's criteria for their selection. A non-probabilistic investigation was presented, for which its type of sampling is for convenience, this technique was presented for the reason of feasibility of the selection of the sample since they were not altogether to make a random selection. In the same way, [Otzen & Manterola \(2017\)](#), ensure the development of the selection in case probabilistic methods cannot be executed.

As indicated by [Mendoza & Ávila \(2020\)](#), The techniques and instruments are very important for an investigation in the sense that it allows the collection of field data for a study, for this the technique indicates the way in which the survey was carried out. information and the instrument is the explicit format that will be used for the participants to capture the results. The technique applied was the survey and as an instrument that served to collect information is a diagnostic test, which consisted of the development of an essay, adapted from a research work developed by Gabriela Ferrucci Montoya and Claudia Pastor Flores in 2013. said test is validated by experts in academic writing. The test contains five indicators, which assess writing knowledge. Indicator (I) Relevance and solidity of the content, consists of four items in total, Indicator (II) Organization of the content consists of two points in total, Indicator (III) Lexical-grammatical competence consists of two in total, Indicator (IV) Score consists of one point in total and the Indicator (V) Spelling that consists of one point in total.

[Gutiérrez \(2021\)](#), indicates that every project requires that its own activities be developed for its preparation. The information was collected by performing an academic writing test in two moments; At the beginning of the investigation, a (Pretest) and then the spiral curriculum methodology was applied through a study program. Previously, the instruments were validated by three experts. Once the type of variables was determined, the coding and creation of the database for both variables was carried out, the instruments were elaborated and the application of these was developed, the data was worked on in statistical programs such as SPSS as well as the quantum analysis of the variables and a descriptive analysis was proposed for which we first took the independent variables and used descriptive statistics, which are shown in a graph that allows analyzing the data in percentages, this information is shown with a line before the posttest data, after the pretest, the test data is obtained, for the inferential analysis the Shapiro-Wilk normality test was applied at first, whose data indicated that the trend is non-parametric, so the U test was applied Mann Whitney for independent samples. Followed by coordination with the educational institution in order to make the results of the investigation known to the authorities ([Sarica & Usluel, 2016](#); [Lai, 1993](#); [Veladat & Mohammadi, 2011](#)).

To achieve this objective, the following selection criteria, shown in Figure 1, were taken into account.

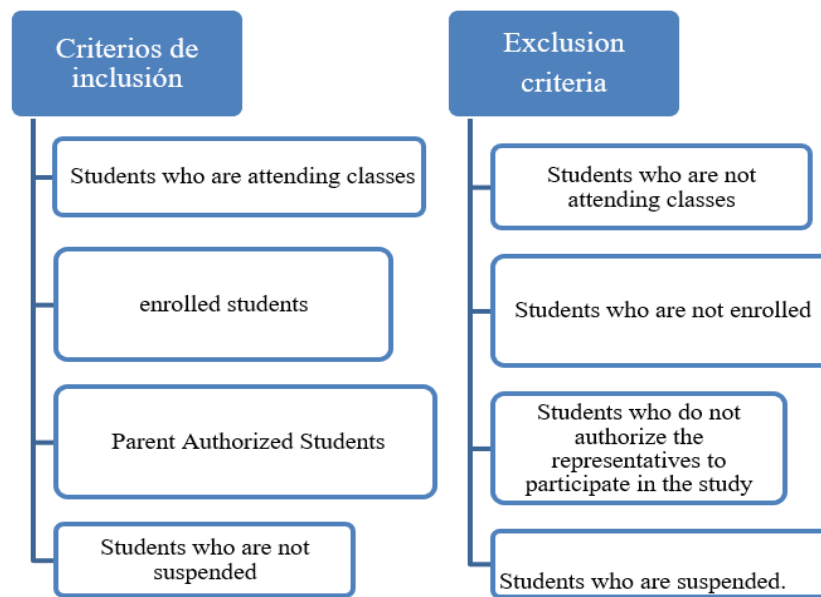


Figure 1. Teacher inclusion and exclusion criteria

The level of development of writing skills was determined in the experimental and control groups, before the implementation of the spiral curriculum method.

Table 1
Level of development of writing skills control group Pre-Test

Level	Pretest Relevance and solidity of the content		Organization of the content		Lexical grammatical competence		Score		Spelling	
	frequency	(%)	frequency	(%)	frequency	(%)	frequency	(%)	frequency	(%)
High	1	4.8	3	14.3	0	0.0	8	38.1	13	61.9
Medium	6	28.6	4	19.0	3	14.3	1	4.8	0	0.0
Low	14	66.7	14	66	18	85.7	12	57.1	8	38.1
TOTAL	21	100	21	100	21	100	21	100	21	100

The results presented in Table 1 show the application of the instrument where the levels of writing skills of the control group can be evidenced at the pretest level, with the respective percentages in the evaluated dimensions. The general results show that the vast majority of students before the application of the program are in the low and medium levels, the application of the program being important. Table 2 shows the level of development of writing skills in the Experimental Pre-Test writing group.

Table 2
Level of development of writing skills Experimental group Pre-Test

Level	Pretest									
	Relevance and solidity of the content	(%)	Organizatio n of the content	(%)	Grammatical lexical competence	(%)	Punctuation	(%)	Spelling	(%)
High	0	0	2	10	0	0	10	48	12	57
Medium	8	38	5	24	3	14	1	5	0	0
Low	13	62	14	67	18	86	10	48	9	43
TOTAL	21	100	21	100	21	100	21	100	21	100

In relation to the data shown in Table 2 for the experimental group at the pretest level, the deficiencies in percentages are equally evident in the wording, showing that the levels before the application of the program are mostly medium and low. It can be seen that, at the time of being evaluated with the diagnostic test, both groups, both the control and the experimental, present the same characteristics in reference to the difficulties of writing skills. Table 3 shows the contrasting of the hypothesis of the experimental group and the control.

Table 3
Hypothesis contrast between the experimental group and the pretest control group.

	Statistical	Shapiro-Wilk df	Sig.
Experimental Group			
I Relevance and solidity of the content	0.796	21	0.001
II Organization of the content	0.831	21	0.002
III Grammatical lexical competence	0.724	21	0.000

IV Punctuation	0.670	21	0.000
V Spelling	0.698	21	0.000
Control Group			
I Relevance and solidity of the content	0.856	21	0.006
II Organization of the content	0.819	21	0.001
III Grammatical lexical competence	0.724	21	0.000
IV Punctuation	0.657	21	0.000
V Spelling	0.678	21	0.000

Ho The data has a normal distribution
 Ha The data does not have a normal distribution
 Yes $P < 0.05$ We reject H_0 and accept H_a
 If $P > 0.05$ We reject H_a and accept H_0

The results shown in table 3 indicate an average value of 22.33 for the experimental group and 20.67 for the control group, showing that the difference is minimal between both groups, so both the control and experimental groups are homogeneous. Table 4 shows the inferential pretest test

Table 4
Inferential test of pretest

Experimental group and control group	
Mann-Whitney	U 203,000
Wilcoxon W	434,000
Z	-0.443
Sig. Asymptotic (bilateral)	0.658

The results indicate that the levels of the two control and experimental groups were 0.658, this being greater than 0.05, therefore, H_{a1} is accepted, indicating that the behavior of the groups is homogeneous before the start of the experience, which is the application of the spiral curriculum method, rejecting the null hypothesis. Specific Objective 2: Determine the level of efficiency of the implementation of the enactive, iconic and symbolic dimensions of the spiral curriculum method in the writing skills of the students of the experimental and control group. Table 5 shows the comparison of the averages of the writing skills of the control group

Table 5
Comparison of averages of the writing skills of the control group

Aspects	Relevance and solidity of the content	Organization of the content	Lexical grammatical competence	score	Spelling
Pretest	2.05	1.19	1.00	0.70	0.80
Posttest	2.52	1.50	1.19	0.88	0.88
Difference	0.48	0.31	0.19	0.18	0.08

As observed in the comparison of averages between the pretest and posttest groups of the control group, observing in all cases that the posttest has a slight increase in its performance compared to the pretest, so there is no consistent improvement in the performance of the writing skills of the students in the control group. control, so we can see from the study that there is a positive difference, however, this is not wide in any of the dimensions, in some variables the difference is very close to zero, so the difference is based only on the knowledge that they have acquired as part of their habitual teaching training processes. Table 6 shows the comparison of averages of the writing skills of the experimental group.

Table 6
Comparison of averages of the writing skills of the experimental group

Aspects	Relevance and solidity of the content	Organization of the content	Grammatical lexical competence	Score	Spelling
Pre-test	2.24	1.17	1.00	0.75	0.77
Post-test	3.12	1.81	1.33	0.93	0.90
Difference	0.88	0.64	0.33	0.18	0.13

The differences of the means of the experimental group are shown where the difference between the pretest and posttest is positive and significant, clearly indicating that the trend is broader in all the data, showing that if there is an effect of the implemented program, the data indicates that there is an improvement in the abilities of the students giving a direct effect of the implemented proposal, on the other hand, It is shown that the students have efficiently assimilated the teachings taught by the methodology, the principle of this approach being the periodic repetition of the main topics to be reinforced in order to generate learning. much deeper than the knowledge that was imparted. Specific objective 3: Determine the level of development of writing skills in the experimental and control groups, after the implementation of the spiral curriculum method. Table 7 shows the level of development of the writing activities of the post-test control group.

Table 7
Level of development of writing skills control group Post-Test

Level	Test									
	Relevance and solidity of the content (%)	Organization of the content (%)	Grammatical lexical competence (%)	Score (%)	Spelling (%)					
High	1	4.8	7	33.3	0	0	16	76	16	76
Medium	9	42.9	7	33.3	8	38	0	0	0	0
Low	11	52.4	7	33.3	13	62	5	24	5	24
TOTAL	21	100	21	100	21	100	21	100	21	100

The results shown in table 7 indicate the writing levels that the control students have obtained based on a learning process of dictation strategies in the educational institution shown in percentages, as shown by the vast majority of students are in the medium and low levels, students have a certain improvement, but this is not perceived because it is small, this is due to the standard training process they receive, which does generate an effect, but it develops in the medium and long term. Table 8 shows the results obtained at the level of development of writing skills in the Experimental Posttest group.

Table 8
Level of development of writing skills Post-test Experimental group Post

level	Relevance and solidity of the content (%)	Organization of the content (%)	-test Grammatical lexical competence (%)	Punctuation (%)	Spelling (%)					
High	3	14	14	67	3	14	18	86	17	81
Medium	18	86	6	29	8	38	0	0	0	0
Low	0	0	1	5	10	48	3	14	4	19
TOTAL	21	100	21	100	21	100	21	100	21	100

As observed in Table 8, the results of the experimental group in the post-test process, in percentages the vast majority of students are in the medium and high levels with respect to writing skills, after the application of

the spiral curriculum method, thus showing that the level of development of writing skills has improved for the experimental group. Table 9 shows the comparison of the hypothesis of the experimental group and the post-test control group.

Table 9
Hypothesis contrast between the experimental group and the post-test control group

Groups	N	Average rank	Sum of ranks
Experimental group and control group	21	29.60	621.50
	21	13.40	281.50
Total	42		

Observed results, show an average range for the experimental group of 29.60 and that it has a wide distance from the value of the control group, which was 13.40. General Objective: Determine the impact of the spiral curriculum methodology on students' writing skills. Table 10 shows the inferential post-test test

Table 10
Posttest inferential test

	Experimental group and control group
Mann-Whitney U	50,500
Wilcoxon W	-4,382
Z	281,500
Asymptotic Sig. (bilateral)	0,000

According to the results shown, the asymptotic significance value was 0.000, which is less than 0.05 ($p < 0.05$) with this result, H03 is rejected and the alternative hypothesis Ha3 is accepted, indicating that there is a significant difference between the control and experimental groups when the proposal was applied. Table 11 shows the level of development of writing skills before the implementation of the spiral curriculum method.

Table 11
Level of development of writing skills before the implementation of the spiral curriculum method.

Level	Pretest			
	Control frequency	(%)	Group Experimental Group frequency	(%)
High	11	52.4	11	52.4
Medium	5	23.8	4	19.0
Low	5	23.8	6	28.6
TOTAL	21	100	21	100

It is shown that the levels reached on writing skills before the application of the spiral curriculum method for both the control group and the experimental group, clearly show that there is no difference, standing out between the two groups before the application of the program. Table 12 shows the level of efficiency of the implementation of the spiral curriculum methodology in the writing skills of the experimental and control group.

Table 12

The efficiency level of the implementation of the spiral curriculum methodology in the writing skills of the experimental and control group

Level	Posttest			
	Control frequency	(%)	Group Experimental Group frequency	(%)
High	12	57.1	18	85.7%
Medium	4	19.0	2	9.5%
Low	5	23.8	1	4.8%
TOTAL	21	100	21	100%

The results obtained with respect to the application of the writing skills program based on the spiral curriculum methodology are observed for the experimental group and in the control group the lack of application of the method, clearly showing the effects of the application of the program. The data presented in table 10 show the results of the spiral curriculum method with a significance of 0.00, concluding that the implementation of the methodology does generate a substantial improvement in the students' writing skills.

With these results and what is proposed in the hypothesis, it is confirmed that the implementation of the spiral curriculum did have a significant impact on the achievement of students' writing skills with a significance level of 0.00 in the contrast test of the hypothesis presented. In table 10, the results presented are similar to those found by [Alvaro Cabeza \(2017\)](#) in his research that showed that the application of reading comprehension achieves correct writing of texts in the students of the educational institution where it was observed. previously that the students did not have sufficient skills in 48% to carry out correct writing, while in this research presented in table 11 it indicates that 52.4% show writing difficulties, evidencing it was demonstrated that there is significance between the two variables of 0.000, indicating that if reading comprehension is properly applied, development is promoted. development of text writing skills, since this variable maintains that students can generate diverse cognitive abilities so that they can directly identify the rules and regulations of text writing, in the sense of developing sentences with a logical order correctly written and with an adequate application of punctuation marks.

The results shown in table 11 denote that the application of the enactive, iconic and symbolic dimensions of the spiral curriculum method has a significant impact on writing skills with the results shown by the students of the experimental group, contrasting with the control group that presents its results in table 10 where it is observed that the control group in the post-test does not present any relevance in their learning, while the experimental group which was exposed to the application of the study program are similar to the presented by [Rodríguez Benavides \(2018\)](#), in his research where he seeks the elaboration and application of a methodological proposal of the spiral curriculum in the search for the improvement of the writing skills of the students, addressing a problem in which the students do not have the notions appropriate for the development of writing and the dictation carried out by teachers, with a n average level of 50%, observing that many of them do not write what they are dictated for reasons of not knowing the basic guidelines of writing, for this the spiral curriculum proposal was elaborated with the use of various motivational techniques, game and also of writing practice, at first to motivate and generate expectation in students, secondly improving knowledge about writing techniques and the presentation of practical cases of writing texts, finally the proposal has achieved the improvement substantial of the students regarding their writing skills with a significant value of 0.00, being very important that various innovative proposals can be generated to improve these skills in students.

For the first specific hypothesis it was possible to demonstrate that the levels of writing in the experimental and control groups before the application of the proposal are similar, with the data presented in Table 3 and 4 indicating that the behavior of the groups before the application of the proposal are homogeneous, in that sense the data agree with those found by [Arbizu Rodríguez \(2019\)](#), his research where he aimed at the application of a proposal of methodological strategies such as spiral curriculum to improve students' writing skills in response to a generalized problem in students which showing levels in the writing of texts with percentages less than 50% for medium and low levels, Also in reading comprehension and in the skills of identifying words, these behaviors have been developed at the beginning of the research, therefore a

proposal was developed, where it is indicated that a group was defined in which the study was developed, in initial conditions in which the students had many difficulties in writing, At the end of the study it was shown that the methodological proposal has a positive and significant effect on the abilities of students to achieve the writing of a text through the application of spiral curriculum method, also indicates that students by developing a greater speed of the written text, generate a better understanding of the texts and the generation of clear and orderly ideas at the time of developing writing, This behavior is similar to those presented by this research.

These results are corroborated as stated by [Neumann et al. \(2017\)](#), mentioning that the spiral curriculum is a methodology that has been proposed by Jerome Bruner, where learning is done with the repetition of the topics learned but with different approaches, in which students observe different strategies for the same topic, understanding that this methodology is used to develop skills in various school subjects such as science, mathematics, also for writing and language, for this the teacher must have adequate knowledge of this methodology, its concept, principles of application as well as the strategies that must be applied in the teaching process, students show with the application of this methodology, higher levels of understanding by generating a constant reminder of the topics discussed previously, by which not being applied does not ensure the complete generation of students' writing skills.

The results of table 1 and 7 showed that students in their usual training processes do not develop textwriting skills efficiently, this may be due to various factors that are limiting in the training processes, the first is the applied educational materials which lack innovative strategies that generate an expectation in students to develop this skill, Another aspect to take into account is the limited capacity of teachers to apply different strategies such as those raised in this study in their students, using the classic expository methodology in the dual the teacher is the one who directs the class session and the student only militates to listen, generating boredom, the educational infrastructure is also a factor to take into account due to the number of students who are placed by classroom, this being a factor that prevents the teacher from developing more didactic strategies, finally mind is the interest of the student himself who does not implement techniques of self-motivation of study that allows to improve on his own his skills, this situation generates a competitive deface in the students in front of other institutions that if they promote the practical and didactic teaching of the dictation of texts, paraphrasing, the correct application of punctuation marks and spelling very important so that students can have an adequate academic performance ([Wollscheid et al., 2016](#); [Kim et al., 2021](#); [Derish et al., 2007](#)).

In reference to the second specific hypothesis, it has been demonstrated that the level of efficiency of the implementation of the proposal is effective and significant for the development of writing skills, the data shown in Tables 5 and 6 with the values of the average comparison where it is shown that the difference is wide between the experimental groups at the level of pretest and posttest. These results coincide with those found by [Calderón Chambi \(2018\)](#), in his research found that the relationship between the production of texts with the writing of the text has significance, stating that young people who write text improve their writing, in that sense it was shown that students to dedicate themselves to textual writing improve their writing skills.

For the third specific hypothesis, it was demonstrated that the levels of writing skills of the experimental group are significantly higher than those found in the control group for this purpose tables 11 and 12 were presented where a value of 0.00 has been obtained, which is less than 0.05 where it is indicated that there is a significant difference in the results achieved by the proposal in the students of the experimental group at the pretest level and of the posttest. With the data previously exposed, they were compared with those presented by [Alvaro Cabeza \(2017\)](#), who developed his research to analyze the relationship between reading comprehension and the production of texts, where it was shown that students do not have adequate skills for writing texts, indicating that when correctly applying strategies for reading comprehension, allows students to improve their abilities for writing texts having this correlation value of 0.55, being significant and direct, students at the time of writing must understand what they are developing, in the sense that when writing a text they are developing a product that will be evaluated and measured by the teacher, Finally, it is indicated that the relationship between these variables has significance in the same way that a positive significance was found in this research. The results show that the application of the proposal has an important difference if compared to the control group in which the proposal has not been applied, this implies a shocking and motivating effect on the students, taking them out of their routine, presenting innovative techniques and strategies that students accept with positivism.

4 Conclusion

The application of the spiral curriculum method was shown to improve the writing skills of third-year high school students in Guayas, Ecuador, with a high level of significance demonstrated by the hypothesis test. It was possible to diagnose the level of development of writing skills in the experimental and control groups, before the implementation of the spiral curriculum method, with a value for the experimental of 22.33 and for the control of 20.67, with a significance of 0.658, concluding that the difference before the application of the program in the test is not significant, thus demonstrating that both groups were homogeneous before the process. The implementation of the proposal has a high level of efficiency in the development of the students' text-writing skills with the comparison of the averages between the experimental and control groups, these data is presented in table 7 and 8 respectively demonstrating the efficiency of the method. It has been possible to determine the level of development of writing skills in the experimental and control groups, after the implementation of the spiral curriculum method, with a value of 29.60 for the experimental group and 13.40 for the control group, with a significance value of 0.000, concluding that the difference is significant.

Acknowledgments


I am grateful to two anonymous reviewers for their valuable comments on the earlier version of this paper.

References

- Alvaro Cabeza, K.A. (2017). Reading comprehension and text writing in Ventanilla-2016 students.
- Arbizu Rodriguez, LO (2019). Cognitive strategies and the writing of texts in English in high school students, Educational Institution "Micaela Bastidas", Lima East. 2019.
- Ariyanfar, S., & Mitchell, R. (2020). Teaching writing skills through genre: applying the genre-based approach in Iran. *International research journal of management, IT and social sciences*, 7(1), 242-257.
- Bruner, JS (2018). *Cognitive development and education*. Morata Editions.
- Calderón Chambi, ME (2018). Text production strategies and their influence on the writing of texts in students of the 3rd grade of primary education at IE Ollantay-N° 6038, 2018.
- Derish, P. A., Maa, J., Ascher, N. L., & Harris, H. W. (2007). Enhancing the mission of academic surgery by promoting scientific writing skills. *Journal of Surgical Research*, 140(2), 177-183. <https://doi.org/10.1016/j.jss.2007.02.018>
- Esteban, N. (2018). Types of research. *Santo Domingo de Guzmán University*, 2.
- Fahimi, Z., & Rahimi, A. (2015). On the impact of self-assessment practice on writing skill. *Procedia-Social and Behavioral Sciences*, 192, 730-736. <https://doi.org/10.1016/j.sbspro.2015.06.082>
- Ghaffar, M. A., Khairallah, M., & Salloum, S. (2020). Co-constructed rubrics and assessment for learning: The impact on middle school students' attitudes and writing skills. *Assessing Writing*, 45, 100468. <https://doi.org/10.1016/j.asw.2020.100468>
- Gutiérrez, HC (2021). *The research elements*. magisterium.
- Hernández-Ávila, CE, & Escobar, NAC (2019). Introduction to the types of sampling. *Alert, Scientific Journal of the National Institute of Health*, 2 (1 (January-June)), 75-79.
- Hernández-Sampieri, R., Fernández-Collado, R., & Baptista-Lucio, P. (2017). Sample selection.
- Huber, M. M., Leach-López, M. A., Lee, E., & Mafi, S. L. (2020). Improving accounting student writing skills using writing circles. *Journal of Accounting Education*, 53, 100694. <https://doi.org/10.1016/j.jaccedu.2020.100694>
- Khair, U., & Misnawati, M. (2022). Indonesian language teaching in elementary school: Cooperative learning model explicit type instructions chronological technique of events on narrative writing skills from interview texts. *Linguistics and Culture Review*, 6, 172-184.
- Kim, Y. S. G., Yang, D., Reyes, M., & Connor, C. (2021). Writing instruction improves students' writing skills differentially depending on focal instruction and children: A meta-analysis for primary grade students. *Educational Research Review*, 34, 100408. <https://doi.org/10.1016/j.edurev.2021.100408>
- Lai, F. K. (1993). The effect of a summer reading course on reading and writing skills. *System*, 21(1), 87-100. [https://doi.org/10.1016/0346-251X\(93\)90009-6](https://doi.org/10.1016/0346-251X(93)90009-6)
- Lam, R. (2013). Two portfolio systems: EFL students' perceptions of writing ability, text improvement, and feedback. *Assessing Writing*, 18(2), 132-153. <https://doi.org/10.1016/j.asw.2012.10.003>
- Madrid Tamayo, T. (2019). The educational system of Ecuador: one system, two worlds. *Andean Journal of Education*, 2 (1), 8-17.
- Mendoza Velazco, D. J., Abrigo Córdova, I., Romero Chávez, J., Cueva Bravo, F., & Cejas Martínez, M. F. (2019). The formative research of ecuadorian university teaching staff.
- Mendoza, SH, & Avila, DD (2020). Data collection techniques and instruments. *Scientific Bulletin of Administrative Economic Sciences of the ICEA*, 9 (17), 51-53.
- Neumann, Y., Neumann, E., & Lewis, S. (2017). The robust learning model with a spiral curriculum: Implications for the educational effectiveness of online master degree programs. *Contemporary Issues in Education Research*, 10(2), 95-108.
- Otzen, T., & Manterola, C. (2017). Sampling Techniques on a Population to Study. *International Journal of Morphology*, 35 (1), 227-232.
- Pastor, BFR (2019). Population and sample. *Continental People*, 30 (1), 245-247.
- Pereyra, LE (Ed.). (2022). *Research methodology*. Click.
- Rodríguez Benavides, LB (2018). Methodological Proposal to improve the Writing of Texts of the Students of the I Semester of the Professional Career of Automotive Mechanics-Instituto Superior Tecnológico Público "Carlos Salazar Romero" - District of Nuevo Chimbote of the Year 2009.
- Rojas, VMN (2021). *Research Methodology: Design, Execution, and Report*. Editions of the U.

- Sarıca, H. Ç., & Usluel, Y. K. (2016). The effect of digital storytelling on visual memory and writing skills. *Computers & Education*, 94, 298-309. <https://doi.org/10.1016/j.compedu.2015.11.016>
- Silva, MV Ñ., & Valdez, GRL (2017). Writing level of academic texts of students entering college. *Option: Journal of Human and Social Sciences*, (84), 791-817.
- Unesco. (1981). *Main project of education in Latin America and the Caribbean: its objectives, characteristics and modalities of action*. Unesco.
- UNICEF. (2019). UNICEF Education Strategy 2019-2030.
- Veladat, F., & Mohammadi, F. (2011). Spiral learning teaching method: Stair stepped to promote learning. *Procedia-Social and Behavioral Sciences*, 29, 1115-1122. <https://doi.org/10.1016/j.sbspro.2011.11.345>
- Wollscheid, S., Sjaastad, J., & Tømte, C. (2016). The impact of digital devices vs. Pen (cil) and paper on primary school students' writing skills—A research review. *Computers & education*, 95, 19-35. <https://doi.org/10.1016/j.compedu.2015.12.001>

Biography of Authors

	<p>Michelle Flor Cajamarca-Ortiz She is a Master's in teaching and Management in Higher Education, Auditor Certified Public Accountant, and Ph.D. student in Educational Administration, at Universidad César Vallejo, Peru. <i>Email:</i> P7002322285@ucvvirtual.Edu.pe, michellecajamarca79@gmail.com https://orcid.org/0000-0002-3375-3426</p>
------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------