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DIDACTIC MEDIATION OF ICT FOR THE STRENGTHENING OF ENGLISH LANGUAGE SKILLS (LISTENING – SPEAKING) IN 2ND GRADE PRIMARY SCHOOL STUDENTS

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Abstract: This study presents, through a quasi-experimental design with a quantitative approach, the implementation experience of a didactic mediation proposal using ICT to strengthen the listening and speaking skills in English of primary school students from two public institutions in Barranquilla, Colombia. Under this approach, eight sequential workshops were implemented, integrating vocabulary, grammatical structures, and digital tools in real communication contexts. The results, both from exploratory and confirmatory analyses, show a positive and significant impact on the performance of the experimental group, highlighting the effectiveness of ICT use in strengthening linguistic competencies in official school settings.

Keywords: ICT, students, English, linguistic competencies.

GENERAL CONTEXT OF THE RESEARCH AND PROBLEM

One of the strategies that has become more relevant in recent years to strengthen the learning of a second language from an early age is the incorporation of Information and Communication Technologies (ICT) as mediators in the teaching-learning process. In Colombia, the Ministry of National Education has promoted various public policies aimed at the development of communicative skills in English as a foreign language, especially through the Colombia Bilingüe program and more recently with the "Soy Bilingüe" strategy in districts such as Barranquilla. However, the results obtained in the Saber tests and international language proficiency reports show that Colombian students, particularly in basic primary public education, have low levels of competence in skills such as listening comprehension and oral expression (MEN, 2023; EF EPI, 2023). The Common European Framework of Reference for Languages (CEFR) establishes the expected levels of proficiency in the learning of foreign languages, placing as an ideal that students in grade eleven achieve at least a B1 level. However, the most recent data show that most students are at A1 levels or even below, which reflects a significant gap between what was proposed and what was achieved. Among the causes identified are: the predominant use of traditional methodologies, the limited teacher training in digital tools applied to English, and the low intensity of the subject, especially in the first school grades.

In this framework, ICT is presented as an innovative and motivating resource, capable of generating dynamic, meaningful and personalized learning environments, aligned with the interests of students, considered digital natives. The didactic mediation of ICT also allows the integration of multiple languages (visual, sound, interactive) that favor the development of linguistic skills, especially productive ones such as speaking and receptive skills such as listening, which are usually the least developed in traditional school contexts.

Therefore, it is necessary to answer the following question: How does the didactic mediation of ICT strengthen the linguistic skills of the English language in elementary school students of two official institutions in the city of Barranquilla?

APPROACHES TO THE OBJECT OF KNOWLEDGE AND THE STATE OF THE ART

The incorporation of pedagogical strategies based on the didactic mediation of ICT within the English curriculum in basic primary education is an essential component for the strengthening of communicative competencies in a second language, especially in public educational contexts in Colombia. This integration responds not only to the current challenges of the education system in terms of quality and inclusion, but also to the commitment to the development of skills necessary for participation in a globalized society. To this extent, some of the fundamental references for this research approach are based on previous studies and experiences that demonstrate the positive impact of the use of digital tools on English language learning, as evidenced in.

TABLE 1. STATE OF THE ART

Year	Author	Scenario	Construct	Variable
2021	Manrique Huertas, Virginia Elizabeth	Lima – Peru	ICT and English learning in high school students in Lima	The research evidenced a direct and positive relationship between the knowledge and use of ICT and the learning of English in students of a high school in Lima, concluding that, the greater the digital literacy, comprehension of multimedia material and application of technological tools in class, the greater the performance in this language.
2021	Muñoz	Trujillo – Peru	TPACK Program in English Competencies in Second Grade Students at the San José Obrero Educational Institution, Trujillo	The implementation of the TPACK program, together with a virtual learning environment (LMS), significantly improves communicative skills in English in second grade students. The study highlights how the integrated use of technology, pedagogy and content strengthens language learning.
2020	Zamora	Venezuela	Learning English through ICT	The use of ICT as a pedagogical tool significantly energizes the teaching-learning processes of English, taking advantage of the mastery that young people already have of technological resources in their daily lives. This facilitates the integration of ICT in the classroom, enhancing language learning and generating more active, interactive and motivating environments for students.
2021	Basantes-Arias, E. A., Escobar-Murillo, M. G., Cárdenas-Moyano, M. Y., & de los Ángeles Barragán-Murillo, R	Ecuador	The Impact of Virtuality on English Language Learning in Higher Education in Ecuador	The authors highlight that ICTs, when integrated with relevant methodologies, enhance communicative skills and increase student motivation, generating more dynamic, interactive and effective learning environments for the acquisition of a second language.

2020	Del Pezo González, Grace Carolina.	Ecuador	Methodological strategies with the use of ICTs for the teaching of English in an Educational Unit of La Libertad, Ecuador	The study of quantitative approach and propositional descriptive model showed that the use of ICT tools in the dimensions of reading, writing, listening reflect a need for greater technological appropriation by teachers to enhance the learning of the English language.
2019	Ramírez Hernández, Mayra	Mexico	Interactive applications as teaching strategies for learning a second language for students of Normal Primaria	Under a quantitative approach and causal correlational design, the study showed that the incorporation of technological tools in the classroom clearly and positively favors language learning, highlighting its effectiveness in improving oral expression in educational contexts.
2023	Vidal González, Sandra	Colombia	Pedagogical strategy with the mediation of ICT to improve English communication skills in students of the sixth grade of the I. E. Escipión Jaramillo, Caloto-Cauca	Through a qualitative approach and action research, it was evident that knowing the realities and needs of students allowed the implementation of a motivational and contextualized methodology, which strengthened their perspective and attitude towards learning English, providing key elements for more effective and inclusive pedagogical processes.
2023	Sarita Salazar Gómez, Luisa Fernanda Grajales Diaz	Colombia	Promotion of communicative skills in the English language in second grade students through ICT-mediated resources.	Research from the Catholic University of Pereira showed that the use of ICT-mediated resources significantly improves English communication skills in second-grade students. The study concludes that these tools create more motivating, interactive and relevant learning environments, favoring a more effective and attractive educational process.
2022	Álvarez Monsalve, Carolina del Carmen	Colombia	Reading comprehension in English as a foreign language in students in the ninth grade of basic secondary mediated by ICT.	The research showed that the use of ICT tools, especially Google Classroom, facilitates the development of reading comprehension in English as a foreign language in ninth grade students. Through a didactic unit structured in three moments (diagnosis, implementation and evaluation), a significant advance in the levels of literal and inferential comprehension was evidenced.
2021	Ardila Berdugo,	Colombia	Development of a didactic	The study showed that the implementation of a didactic

	Diana Lizeth, Sandra Patricia Arias Malaver y Ana Milena Hernández Galvis.		sequence to strengthen reading comprehension in English, as a second language, through the British Council Learn English Teens digital educational tool, in grade 701 students of the I.E.D.R. San Gabriel de Cajicá, in the remote education modality	sequence mediated by the British Council Learn English Teens digital tool significantly strengthened reading comprehension in English in secondary school students under remote modality. Through the qualitative approach and the Participatory Action Research method, pedagogical changes aimed at student empowerment were promoted. This research provides valuable theoretical and methodological elements that support the use of digital resources to improve the learning of English as a second language in school contexts.

Within the research process, it is found that the sources agree that the implementation of strategies mediated by ICT to strengthen the learning of the English language should be considered of great importance, especially in communicative skills such as listening, speaking and reading comprehension. The research presented shows that the use of digital tools, virtual platforms and models such as TPACK allow for the creation of more dynamic, motivating and relevant learning environments, which respond to the current needs of students and favor more meaningful and autonomous learning. These strategies are aligned with the principles of competency development for the 21st century and the educational quality objectives proposed by international organizations such as UNESCO.

METHODOLOGICAL DESIGN AND PROCEDURE

To achieve the objectives of this research, a quantitative approach is adopted with a non-probabilistic quasi-experimental design, framed in the positivist paradigm, which allows identifying causal relationships between variables without direct manipulation of the environment (Hernández Sampieri, 2014). This type of design is relevant to validate the impact of a proposal for ICT didactic mediation on the strengthening of English language skills in second grade students.

For the collection of information, the application of a diagnostic test (pretest) and a final test (posttest) was used as a technique, composed of items aligned with the Common European Framework of Reference for Languages, designed to assess listening and speaking skills. These tests were applied to two groups: an experimental group (74 students) and a control group (72 students), belonging to district educational institutions.

INSTRUMENT RELIABILITY STUDY

The instrument was subjected to a validation process by experts in the area of English education and teaching, who evaluated its relevance through a content validation sheet. This exercise included the analysis of fundamental aspects such as the objectives of the study, clarity in the wording of the questions, relevance of each item with respect to listening and speaking language skills, and the level of difficulty perceived for the second grade students. This process allowed adjustments and improvements to be made to the instrument before its final application, thus guaranteeing its conceptual validity and its adequacy to the educational context of the participating institutions. (See Fig.1)

GENERAL EVALUATION INSTRUMENT

IDENTIFICATION OF THE INSTRUMENT EVALUATOR

1. **Do you consider that the proposed instruments allow for collecting information that contributes to achieving the objectives?**
   Yes: ☐ Why?
   No: ☐ Why?

They facilitate understanding through the proposed activities, addressing the skills of listening and speaking.

2. **Do you consider that the instruments are well designed?**
   Yes: ☐ Why?
   No: ☐ Why?

The instruments themselves are presented in a didactic way, allowing motivation to participate and respond, and making it easier to get familiar with what is expected from the students.

3. **Do you consider that the instruments are consistent with the type of research?**
   Yes: ☐ Why?
   No: ☐ Why?

The use of ICTs, in every sense, is always a strategy that is well-planned, directed, and followed up. They promote participation, facilitate responses even through gamified activities, and help determine students' strengths and weaknesses in the research process, while also allowing for active engagement.

4. **Do you consider the instruments to be valid for the study?**
   Yes: ☐ Why?
   No: ☐ Why?

They address knowledge and diagnosis from the perspective of listening and speaking, later focusing on possible improvements considering the number of questions asked.

FIGURE 1. RELIABILITY OF THE INSTRUMENT BASED ON EXPERT JUDGEMENT

PARTICIPANTS

The population participating in this research was made up of a total of 146 students in the second grade of basic primary education, distributed among two district educational institutions in the city of Barranquilla. Of this total, 72 students were part of the control group and 74 were part of the experimental group. The selection of the sample was non-probabilistic for convenience, taking into account the accessibility and availability of the participants, as well as the institutional conditions for the implementation of the ICT-mediated pedagogical strategy. The students, whose ages range from 6 to 9 years old, participated voluntarily with the authorization of their guardians. The sample was considered adequate to measure the impact of the didactic mediation of ICT on English language skills, specifically listening and speaking, allowing valid comparisons to be made between the groups before and after the intervention.

QUANTITATIVE APPROACH, QUASI-EXPERIMENTAL METHOD

Under the principle that English language skills can be strengthened through innovative technology-mediated teaching strategies, a quantitative approach is adopted that allows the impact of the pedagogical intervention to be objectively measured. In this sense, a quasi-experimental method is used with control and experimental groups, which makes it possible to make comparisons before and after the implementation of the ICT-based didactic proposal. This design fits the nature of the study, since it was not possible to randomly assign the participants, but pre-test and post-test were applied to measure changes in listening and speaking skills in both groups. Data analysis was developed using descriptive and inferential statistics using the SPSS statistical package, through which measures of central tendency and dispersion, normality tests, homogeneity of variance, and non-parametric tests (Mann-Whitney and Wilcoxon) were examined to assess the impact of the intervention. These procedures allowed us to identify significant differences between the groups and validate the effect of the pedagogical strategy mediated by ICT.

RESULTS

INSTRUMENT

For the present research, a diagnostic test and a final test (pre-test and post-test) were designed, composed of items aligned with the standards of the Common European Framework for Listening and Speaking skills. The instrument was validated through the judgment of experts, who evaluated aspects such as clarity, relevance, coherence and adequacy to the educational level of the students. This validation was carried out according to the methodology proposed by Cabero and Llorente (2013), understood as a systematic procedure in which professionals with experience are asked to issue assessments on the instrument; and according to Escobar-Pérez and Cuervo-Martínez (2008), as an effective method to guarantee the quality of the instrument through informed opinions of recognized experts in the area.

INSTRUMENT RELIABILITY.

CRONBACH'S ALPHA COEFFICIENT

In order to determine the reliability of the instrument used in this research, Cronbach's Alpha coefficient was applied, suitable for questionnaires of several alternatives. This coefficient allows estimating the internal consistency of the questionnaire, that is, the degree to which the items coherently measure the proposed construct (Cronbach, 1951). In this study, the analysis was performed using the SPSS version 25 statistical software, yielding a value of $\alpha = 0.680$ for the 21 questions.

Reliability Statistics

Cronbach's Alpha	**Number of Items**
0.680	21

FIGURE 2. CRONBACH'S ALPHA RELIABILITY STATISTIC

According to the interpretation established by Ruiz Bolívar (2013), this value is within the range of "High" reliability (0.61 to 1.0), which indicates that the instrument has an excellent level of internal consistency as shown in Table 2.

Board 1. Interpretation of Cronbach's Alpha reliability

Ranges	Magnitude
0.81 to 1.0	Very high
0.61 to 0.80	Loud
0.41 to 0.60	Moderate
0.21 to 0.40	Casualty
0.01 to 0.20	Very low

Note: table showing the ranges for the interpretation of reliability, by Ruiz Bolívar (2013).

This magnitude suggests that the questionnaire items are highly correlated with each other and strongly reflect the dimensions and indicators defined to assess ICT-mediated English language skills, ensuring the accuracy of the data obtained in the measurement.

GENERAL RESULTS PRE-TEST ENGLISH TEST

The analysis of the results obtained in the diagnostic phase (pretest) made it possible to establish the initial level of performance in the linguistic skills of listening and speaking in the second grade students of the participating educational institutions.

TABLE 3. DESCRIPTIVE RESULTS PRE-TEST ENGLISH TEST CONTROL AND EXPERIMENTAL GROUPS

Pre-test descriptive statistics		
District School 1	Control group	Experimental group
Stocking	53,75	51,6667
Lower limit	51,6403	49,4724
Upper limit	55,8597	53,8609
Average cut to 5%	54	51,6852
Median	55,5	50,5
Variance	38,879	42,057
Desv. Deviation	6,23527	6,48515
Minimal	41	41
Maximum	62	62
Rank	21	21
Interquartile Range	8	11,75
Asymmetry	-0,634	0,125
Curtosis	-0,57	-1,202

Pre-test descriptive statistics		
District School 2	Control group	Experimental group
Media	50,5152	50,8065
Lower limit	47,8793	48,3161
Upper limit	53,151	53,2968
Average cut to 5%	50,4832	50,8047
Median	51	51
Variance	55,258	46,095
Desv. Minimum	7,43354	6,7893
Deviation	40	40
Maximum	62	62
Rank	22	22
Interquartile Range	15	12
Asymmetry	0,12	-0,034
Curtosis	-1,5	-1,121

Note: Table showing the descriptive results of the application of the test before the intervention.

The results of the pre-test allow us to establish relevant differences in the initial performance of the students between the two participating institutions. In district educational institution 1, the control group showed a slightly higher performance with a mean of 53.75 compared to 51.67 in the experimental group. This pattern is also observed in the median (55.5 vs. 50.5) and in the mean cut to 5% (54 vs. 51.68), which reinforces the strength of this difference. Additionally, the confidence intervals of the control group (51.64 to 55.86) are narrower than those of the experimental group (49.47 to 53.86), which suggests greater consistency in the results. The lower variance of the control group (38.88 vs. 42.06) and its lower interquartile range (8 vs. 11.75) confirm a lower dispersion around the mean. From the perspective of distribution, both groups present negative kurtosis indicative of platicurrtic distributions, and although the asymmetry in the control group (-0.634) shows a slight inclination to the right, the experimental group approaches a symmetrical distribution (0.125).

On the other hand, in district educational institution 2, greater homogeneity is observed between the control and experimental groups. The means (50.52 vs. 50.81) and medians (51 in both cases) show a statistical balance that is also reflected in the confidence intervals, whose lower and upper limits are very close. Despite this central similarity, the control group has greater dispersion (variance of 55.26 vs. 46.10 and interquartile range of 15 vs. 12), suggesting greater heterogeneity in performance. The distributions are approximately symmetrical (asymmetry of 0.12 and -0.034) and show negative kurtosis values (-1.50 and -1.12), similar to what was observed in district educational institution 1. These results indicate that, while in school 1 the control group started with a slight but statistically consistent advantage, in school 2 both groups shared practically equivalent initial performance conditions. This characterization strengthens the validity of the quasi-experimental design and provides a solid starting point for evaluating the impact of the ICT-mediated intervention on the development of English language skills.

PRE-TEST NORMALITY TEST

The results of the normality test applied to the pretest scores, using the Shapiro-Wilk statistic, reveal that the data from the control and experimental groups in both institutions do not conform to a normal distribution.

Table 4. English pre-test normality test

School	Variable	Group	Shapiro-Wilk Statistic	df	Sig.
I.E.D.T.B Jorge Nicolás Abell	% correct pretest	Control	0.926	36	0.019
		Experimental	0.938	36	0.043
I.E.D Jesús Misericordioso	% correct pretest	Control	0.905	33	0.007
		Experimental	0.949	31	0.142

In all cases, the significance values (p) were below the critical threshold of 0.05, indicating a violation of the statistical normality assumption. This condition methodologically justifies the decision to apply nonparametric tests in subsequent inferential analysis, such as the Mann-Whitney test, in order to ensure the validity of between-group comparisons. The absence of normality in the data reinforces the relevance of the quantitative approach under a quasi-experimental design, considering the heterogeneous nature of the samples and the limitations inherent to the school environment in real contexts of pedagogical intervention.

PRE-TEST VARIANCE HOMOGENEITY TEST

In continuity with the analysis of statistical assumptions, the homogeneity of variance test performed using the Levene statistic showed that there are no statistically significant differences in the variance of the scores between the control and experimental groups in both educational institutions ($p > 0.05$).

Table 5. Homogeneity test of variance pre-test English test.

School	Variable	Based on	Levene Statistic	df1	df2	Sig.
District School 1	% correct pretest	Mean	0.247	1	70	0.521
		Median	0.272	1	70	0.604
		Median and with adjusted	0.272	1	68.960	0.604
		Trimmed mean	0.298	1	70	0.587
District School 2	% correct pretest	Mean	1.269	1	62	0.264
		Median	1.244	1	62	0.269
		Median and with adjusted	1.244	1	61.155	0.269
		Trimmed mean	1.272	1	62	0.264

According to Table 5, this result indicates that the data present homogeneous variances, which is an essential criterion for the validity of subsequent comparative tests, even in non-parametric analyses. The observed homogeneity reinforces the fairness of baseline conditions between groups prior to the intervention, ensuring that any differences identified in the post-test can be attributed with greater certainty to the effect of the implemented didactic strategy and not to previous structural discrepancies in performance variability. This finding, together with the non-normality of the data, validates the analytical approach adopted and consolidates the rigor of the proposed design.

TRIANGULATION OF PRE-TEST RESULTS

The triangulation of the pretest results integrated descriptive analyses, normality tests (Shapiro-Wilk), homogeneity of variances (Levene) and the non-parametric Mann-Whitney U test, allowing to validate the consistency of the data between the control and experimental groups. The results indicated that there were no statistically significant differences ($p > 0.05$), confirming comparable initial conditions. The non-normality of the data and the homogeneity of variances justified the use of non-parametric tests, strengthening the methodological basis of the study and guaranteeing a rigorous analysis of the impact of the intervention.

OVERALL RESULTS AFTER THE ENGLISH TEST

The results of the post-test show a substantial difference in average performance between the control and experimental groups in both institutions, suggesting a positive effect of the ICT-mediated pedagogical intervention on the development of English language skills.

TABLE 6. DESCRIPTIVE RESULTS AFTER THE ENGLISH TEST, CONTROL AND EXPERIMENTAL GROUPS

DISTRICT SCHOOL 1

Statistic	Control Group	Experimental Group
Mean	72.5833	82.0556
Lower Limit	69.87	78.7642
Upper Limit	75.2966	85.3469
Trimmed Mean (5%)	72.3951	82.1779
Median	71	85
Variance	64.307	94.625
Std. Deviation	8.01917	9.72756
Minimum	62	65
Maximum	87	96
Range	25	31
Interquartile Range	15.5	17.25
Skewness	0.316	-0.195
Kurtosis	-1.239	-1.365

DISTRICT SCHOOL 2

Statistic	Control Group	Experimental Group
Mean	65.1212	88.4194
Lower Limit	61.774	87.0249
Upper Limit	68.4684	89.8138
Trimmed Mean (5%)	64.3889	88.4659
Median	62	86
Variance	89.11	14.452
Std. Deviation	9.4398	3.80153
Minimum	55	81
Maximum	90	95
Range	35	14
Interquartile Range	12.5	4
Skewness	-1.152	0.291
Kurtosis	0.711	-0.209

Note. Table showing the descriptive results of the application of the test after the intervention.

According to Table 6, in District School 1, the experimental group reached a mean of 82.06 versus 72.58 in the control group, with a median of 85 versus 71. This increase of almost 10 points in the mean, together with an equally higher average cut to 5% (82.18 vs. 72.39), indicates a sustained improvement in the performance of the intervened group. Similarly, an even more marked difference was observed in District School 2: the experimental group obtained a mean of 88.42 in contrast to 65.12 in the control group, and a median of 86 versus 62. These differences are further supported by clearly differentiated upper and lower bounds, suggesting that the impact of the intervention was statistically robust.

Regarding the dispersion of the data, in District School 1 the experimental group presented a greater variance (94.63) and standard deviation (9.73) than the control group (variance: 64.30; deviation: 8.01), which reflects a wider distribution, although focused on higher scores. In contrast, in District School 2, the experimental group not only obtained the highest scores, but also showed a considerably lower variance (14.45 vs. 89.11), implying greater homogeneity in performance after the intervention. In addition, the interquartile range of the experimental group in this school was much lower (4 vs. 12.5), confirming this concentration at the higher

levels. The distributions in both experimental groups showed an asymmetry close to zero and negative kurtosis values, compatible with slightly flattened distributions. These findings empirically support the effectiveness of the didactic strategies used, both in terms of average improvement and consistency in student achievement.

NORMALITY TEST POST-TEST RESULTS ENGLISH TEST

The results obtained by the Shapiro-Wilk test applied to the English post-test scores show a significant deviation from the assumption of normality in all the groups analyzed.
Table 7 Shapiro-Wilk post-test normality test results

School	Variable	Group	df	Shapiro-Wilk Statistic	Sig.
District School 1	% correct answers Posttest	Control	36	0.923	0.015
		Experimental	36	0.924	0.017
District School 2	% correct answers Posttest	Control	33	0.876	0.001
		Experimental	31	0.856	0.001

In both schools, both the control and experimental groups have significance values (p) below 0.05 (p = 0.015, 0.017, 0.001 and 0.001, respectively), which confirms that the data distributions do not conform to a normal curve. This statistical condition reinforces the methodological decision to use non-parametric tests for comparative analysis between groups, thus guaranteeing the validity and rigor of the findings. The consistency of these results, both in institutions and in groups with and without intervention, strengthens the robustness of the quasi-experimental design by identifying stable patterns of statistical behavior in the measurement of linguistic performance.

VARIANCE HOMOGENEITY TEST RESULTS POST-TEST ENGLISH TEST

The results of the Levene test for the homogeneity of variances in the English posttest show a differentiated behavior between institutions.
Table 8. Results of the variance homogeneity test

School	Variable	Based on	Levene Statistic	df1	df2	Sig.
District School 1	% correct answers	Mean	2.998	1	70	0.088
	Post test	Median	1.855	1	70	0.178
		Median and with adjusted	1.855	1	66.155	0.178
		Trimmed mean	2.982	1	70	0.089
District School 2	% correct answers	Mean	14.017	1	62	0.000
	Post test	Median	7.114	1	62	0.010
		Median and with adjusted	7.114	1	44.062	0.011
		Trimmed mean	12.074	1	62	0.001

From Table 8, it can be established that in District School 1, there are no statistically significant differences in the variance between the control and experimental groups ($p > 0.05$), which indicates that the assumption of homogeneity is fulfilled and allows us to assume equal conditions of dispersion between both groups. However, in District School 2, significant differences were found ($p < 0.05$) in all comparison methods (mean, median and trimmed mean), which indicates a break in the assumption of homogeneity of variances. This variability reflects that the intervention could have generated a greater concentration of results in the experimental group, consistent with the lower dispersion observed in the descriptive statistics. These findings reaffirm the need to use non-parametric tests in comparative analyses and show a differential impact of the intervention according to the institutional context.

INTRA-GROUP RESULTS PRE-TEST - POST-TEST ENGLISH TEST.

The comparative intragroup analysis between the results of the pre-test and post-test in the experimental and control groups of both institutions shows statistically relevant improvements, especially in the groups submitted to the ICT-mediated didactic intervention. In District School 1, the experimental group increased its mean from 51.66 to 82.05, which represents a gain of more than 30 points, while the control group went from 53.75 to 72.58, which, although significant, implies a more moderate improvement. On the other hand, in District School 2, the experimental group showed an even more pronounced increase, going from 50.80 to 88.41, far outpacing the control group that advanced from 50.52 to 65.12. These differences not only reflect a substantial increase in average performance, but are also accompanied by favorable changes in the measures of dispersion: in the case of School 2, the experimental group considerably reduced its variance in the post-test, indicating greater consistency among the participants. Overall, the intragroup results allow us to affirm that the intervention was not only effective in improving performance levels, but also favored a more homogeneous distribution of achievements, strengthening the pedagogical validity of technological mediation in school contexts.

TRIANGULATION OF POST-TEST RESULTS

The triangulation of post-test results shows significant improvements in listening and oral expression skills in the experimental groups. These improvements are reflected in greater verbal fluency, grammatical structuring and listening comprehension, results that coincide with previous studies such as those by Charpentier (2014) and Díaz and Velásquez (2021), who highlight the positive impact of digital resources on English learning. In this sense, it is confirmed that didactic mediation with ICT strengthened both the linguistic performance and the communicative autonomy of the students.

CONCLUSION

This research showed that didactic mediation with ICT tools is an effective pedagogical strategy to strengthen language skills in English, especially in the components of listening comprehension and oral expression. From a quasi-experimental design with control and experimental groups, it was shown that students exposed to the intervention showed significant improvements in both their quantitative and qualitative performances, supported by rigorous statistical tests. Teacher perceptions and empirical results indicate that the integration of digital resources favors more dynamic, inclusive, and contextualized learning environments, capable of responding to the needs of foreign language training in the Colombian school context. In this sense, the role of ICTs is reaffirmed not only as technological tools, but also as key pedagogical mediators for the achievement of relevant, innovative and quality education.

REFERENCES

1. Acevedo, L. (2014). Strategies for the oral production of the English language in secondary education. National University of Trujillo.
2. Alemán, L., & Guacaneme, M. (2011). Improvement of listening skill in two different contexts: A comparative study. Revista de Lenguas Modernas, 15, 1–15
3. Álvarez Velásquez, M. P. (2024). Impact of video games on the motivation for learning English in 5th grade students at the Gonzalo Jiménez Navas Educational Institution in Floridablanca.
4. Barrios, J., & Orjuela, J. (2012). Use of video to strengthen listening and speaking. Journal of Educational Research, 30(2), 89–102.
5. Basantes-Arias, E. A., Escobar-Murillo, M. G., Cárdenas-Moyano, M. Y., & de los Ángeles Barragán-Murillo, R. (2021). The impact of virtuality on English language learning in higher education. Pole of Knowledge, 6(5), 46-56.
6. Bernal, C. A. (2006). Research Methodology (3rd ed.). Pearson Education.
7. Bernal Torres, C. A. (2010). Research Methodology (Third edition ed.). Colombia: Pearson Education
8. Burbat, R. (2016). Autonomous Learning and ICT in Foreign Language Teaching: Progress or Regression? Porta Linguarum, (26), 37-51.

9. Caucha Méndez, J. C., & Gutierrez Umaña, L. G. (2019). Comparative study of the use of Open Educational Resources for the development of communicative reading and writing skills in English in 4th grade students.
10. Carreras, A. (2012). Use of video to strengthen listening and speaking. Universidad del Norte.
11. Chen, W., & Goh, C. (2011). Teaching oral English in higher education: Challenges to EFL teachers. Asian EFL Journal, 13(2), 35–58.
12. Chacón, C., & Pérez, M. (2011). The podcast as an innovation in the teaching of English as a foreign language. Journal of Educational Research, 29(1), 123–138.
13. Chipana, M., Sánchez, R., & Suárez, J. (2012). Listening comprehension in the teaching of English as a foreign language. Editorial Académica Española.
14. Cifuentes-Pulido, S. P., & Ramos-Durán, J. H. (2020). Duolingo as a strategy
Pedagogical Policies to Strengthen English Learning.
15. Council of Europe. (2001). Common European Framework of Reference for Languages:
Learning, teaching, assessment. Instituto Cervantes.
16. Congress of the Republic of Colombia. (2009). Law 1341 of 2009 (July 30), which defines principles and concepts on the information society and the organization of ICTs. Official Gazette No. 47.426.
17. Durango Aguirre, M. A. (2019). Didactic strategies for the significant learning of the foreign language using ICT in the Bolivarian Educational Institution (Master's thesis, University of La Sabana).
18. Escobar, N. (2011). The mediation of learning in school.
19. Escobar, M. (2011). Pedagogical mediation: an alternative for university teaching. Journal of Education and Social Development, 5(2), 25–38.
20. Gallo Barrera, M. M. (2022). Playful-pedagogical proposal for the acquisition of a second language (English) through the use of mobile learning (M-learning) in transition grade students of the Julio Pérez Ferrero educational institution (Cúcuta).
21. Regulatory Manager, (2009). Law 1341 of 2009, art. 6.
22. Guanoquiza Catota, S. K. (2020). LEARNING ACTIVITIES WITH WEB TOOLS TO STRENGTHEN THE ENGLISH LANGUAGE FOR SEVENTH YEAR STUDENTS (Master's thesis, Quito).
23. Gómez Bustamante, G. (2022). The development of skills in oral competence in the teaching of English as a foreign language through the implementation of web tools in ninth grade of five public schools in Colombia (Doctoral dissertation, Universidad Nacional de La Plata. Faculty of Humanities and Sciences of the
24. Education).
25. Kerlinger, F. N. (2002). Behavioral Research: Social Science Research Methods (4th ed.). McGraw-Hill.
26. Kuehn, A. (2016). Use of video to strengthen listening and speaking. Magazine
27. Mangrove, Universidad del Norte.
28. Lapesa, R. (1987). Linguistic, Literary and Stylistic Studies (Vol. 2). Universitat de Valencia.
29. Lima Montenegro, S. (2005). Pedagogical mediation with the use of information and communication technologies (ICT). Course 67. Pedagogy 2005. Havana.
30. Macias, M. (2017). Methodological strategies to improve speaking and listening skills in the English language in the basic education school of the secular university
31. Eloy Alfaro from Manabí
32. Mallma Ñaupa, Z. (2022). ICT in the learning of English in students of a language center, Andahuaylas, 2021.
33. Mandamás, J. (2016). The use of ICT as a didactic tool for the development of oral expression in English [Master's thesis, Antonio Ruiz de Montoya University].
34. Martínez Pérez, W. M. (2020). Design of a pedagogical proposal to strengthen the use of ICT tools in the area of English in grade 5 of basic primary education, of the
35. Don Alonso Educational Institution in the township of Don Alonso in the municipality of Corozal Sucre-Colombia.
36. Martínez Olvera, W., & Esquivel Gámez, I. (2017). Effects of the instruction of reading strategies, mediated by ICT, on English reading comprehension. Educational Profiles, 39(157), 105-122.
37. Medina, L., & Villanueva, M. (2013). Development of productive English skills in university students. Revista Electrónica Formación y Calidad Educativa, 3(3), 89– 108
38. Meneses Perdomo, F., & Marisancén Varón, P. D. (2023). Strengthening the lexical competence of the English language through the design of a didactic sequence supported by ICT as a pedagogical strategy for tenth grade students of the Nuestra Señora de las Mercedes Educational Institution in El Paujil, Caquetá.

39. Ministry of National Education of Colombia. (1996.). Ten-Year Education Plan
40. 1.996 - 2.005. Government of Colombia. https://www.mineducacion.gov.co/1621/article-
41. 85242.html
42. Ministry of National Education. (2004). National Bilingualism Program 2004-
43. Rezaei, A., & Hashim, F. (2013). Impact of awareness raising about listening microskills on the listening comprehension enhancement: An exploration of the listening microskills in EFL classes. Australian Journal of Teacher Education, 38(8), 1–15.
44. Vidal González, S. (2023). Pedagogical strategy with the mediation of ICT to improve English communication skills in students of the sixth grade of the IE Escipión Jaramillo, Caloto-Cauca.
45. Violet, L. (2022). The importance and difficulties of listening skill: A description.
46. ResearchGate.
47. Zamora-de-González, B. C. (2020). Learning English through ICT: A hermeneutical vision from the perspective of its protagonists. Prohominum, 2(2), 26-47.
48. Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests.
49. Psychometrics, 16(3), 297–334. https://doi.org/10.1007/BF02310555
50. Escobar-Pérez, J., & Cuervo-Martínez, Á. (2008). Content Validity and Expert Judgment: An Approach to Its Use. Advances in Measurement, 6, 27–36.
51. Morales, P. (1988). Measurement of attitudes in psychology and education: construction of scales and methodological problems. Madrid: Universidad Pontificia Comillas.
52. Oviedo, H. C., & Campo-Arias, A. (2005). Approximation to the use of Cronbach's alpha coefficient. Colombian Journal of Psychiatry, 34(4), 572–580.