# THE VIBRATO TECHNIQUE FOR THE DEVELOPMENT OF MUSICAL INTERPRETATION OF TROMBONE STUDENTS AT THE DANIEL ALOMÍA ROBLES NATIONAL UNIVERSITY OF HUÁNUCO, SEMESTER I-2018

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## ABSTRACT

The teaching of any musical discipline is a subject of scarce demand in contemporary pedagogy since it requires a high level of knowledge about the didactic bases to achieve adequate learning in the students who study the different musical specialties. Following the above, the present work aims to determine to what extent the vibrato technique develops the musical interpretation of students of the trombone specialty at the Universidad Nacional Daniel Alomía Robles de Huánuco 2018. Theoretical and empirical methods were applied in the study; the pre-experiment and mathematical statistics were used within the latter. The research had 12 students as a sample, and after applying the technique, the results were positive, evidencing an important transformation in the execution of vibrato in the trombone. This led to accepting the hypothesis with a high level of significance.

**Keywords**: Music interpretation, technique, trombone

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## RESUMEN

La enseñanza de alguna disciplina musical es una temática de escaza demanda en el ámbito de la pedagogía contemporánea, pues requiere de un alto nivel de conocimiento sobre las bases didácticas en aras de lograr un aprendizaje adecuado en los alumnos que cursan las diferentes especialidades musicales. En concordancia con lo anterior, el presente trabajo tiene como objetivo determinar en qué medida la técnica del vibrato desarrolla la interpretación musical de los estudiantes de la especialidad de trombón en la Universidad Nacional Daniel Alomía Robles de Huánuco 2018. En el estudio se aplicaron métodos teóricos, empíricos, y dentro de estos últimos se utilizó el pre experimento y estadísticos matemáticos. La investigación tuvo como muestra a 12 estudiantes, después de aplicar la técnica, los resultados fueron positivos, evidenciándose transformación importante en la ejecución del vibrato en el trombón. Lo que conllevó a aceptar la hipótesis planteada con un nivel alto de significación.

Palabras clave: Interpretación musical, técnica, trombón

## INTRODUCTION

Music and language provide positive effects when interrelated as means of expression. We refer then to two types of language: musical language and verbal language understood as oral speech, reading and alphabetic writing. Both have particular structures and rules. Their development is similar, but they are two systems that are dissimilar due to the quality of their elements: type of message, code, encoding-decoding processes, emission-reception, and channel, among others.

The instrument adds an element to the communication circuit. A communicology could argue that it is only the type of channel that changes, but from a psychological point of view, it is no longer only the sender and the receiver but an indissoluble triad of sender-instrument-message that requires the performer to develop specific skills.

In order to perform a piece of music, the musician must process information differently and develop agility, power and endurance specific to his instrument. This implies the realization of specific cognitive and psychomotor processes. In order to achieve effective musical expression, students must develop skills, knowledge and attitudes that they will use at their discretion, according to their intentions. However, if neither society nor musical training institutions provide the corresponding theory, technique or attitudes, the student will not use that means. It would be like mediocre teaching of musical reading, writing and performance.

Music is always an art, however, close it may seem to spoken language. Its meaning is never of a conceptual order: it is confused with the signifier that is the sound construction (Merleau, 1993).

Several authors have systematized research in the field of music education, among them stand out (Adorno, 1966; Morales, 2015; Rodríguez, 2017; and Rosa, 2017). All these authors agree that this subject has a pedagogical approach. Therefore, the topicality and novelty of these authors are recognized. However, in their proposals, the evaluation of the effectiveness of the vibrato technique for the development of the musical interpretation of students of the trombone specialty is not made explicit. This is an issue that allows to go deeper into this subject.

At the Universidad Nacional Daniel Alomía Robles, musical interpretation still does not enjoy a solid and organized formation, which is why there are deficiencies in the musical interpretation of students of the trombone specialty; the factors are diverse, such as basic training, interpretation techniques, among others.

For the above, the following research problem is identified: To what extent does the vibrato technique develop the musical interpretation of students of the trombone specialty at the Universidad Nacional Daniel Alomía Robles de Huánuco, Semester I-2018?

To solve the following problem, the general objective of the research is: To determine to what extent the vibrato technique develops the musical interpretation of students of the trombone specialty at the Universidad Nacional Daniel Alomía Robles de Huánuco 2018.

While the specific objectives are:

1. To determine the theoretical foundations that support the application of vibrato technique in the musical interpretation of trombone students.

2. To evaluate the effectiveness of the vibrato technique for the development of the musical interpretation of the students of the trombone specialty of the Universidad Nacional Daniel Alomía Robles de Huánuco, semester I-2018.

## MATERIALS AND METHODS

The study used a mixed research approach, with a predominance of the quantitative approach, where the methods are adjusted to the nature of the quantitative approach. It was a descriptive pre-experimental study with two pre-test and post-test moments in a single sample.

This study follows the postulates of researchers such as (Suganthi, Jeyaraman, 2021; Agüero, 2022; Patiño et al., 2022; Martínez et al., 2022) on the organizational procedures of pre-experiments. An important moment is the formulation of the hypothesis to be tested. Diagram 1 shows the logic followed for this type of experimental design.

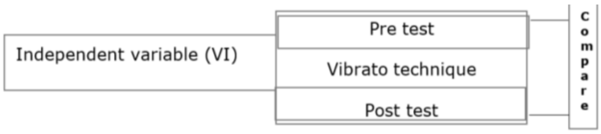


Figure 1. Graphical representation of the logic followed in the pre-experiment.

Source: Valdés (2019).

In addition, during the study, the methodological steps for developing the pre-experiment described by Fleitas et al. (2013) and Valdés (2019) were taken into account. These are presented below:

Step 1. Planning

The statistical hypothesis is formulated, the indicators are selected, and the form of tabulation and interpretation of the results obtained is proposed.

Step 2. Development

The results obtained in the pre-experiment are presented. In the case of this research, a comparison is made between both moments and the existence of statistical significance is verified.

Step 3. Conclusion

This step states the acceptance or rejection of the hypothesis and the explanation of the experiment's validity level. As evidenced by its name, it is a conclusive moment of the pre-experiment.

For the development of this study, a group of theoretical, empirical and statistical mathematical methods was taken into account. These will be described below.

Theoreticians

Analytical-synthetic: to determine the conceptual bases that sustain the vibrato technique for the development of the musical interpretation of the students of the trombone specialty, as well as to specify the components and analyze the results of the developed research.

Inductive-deductive: it made it possible to make inferences and generalizations about the essential elements and components of the vibrato technique for the development of the musical interpretation of the trombone specialty students as for the interpretation of the data obtained in the different moments of the research.

Empirical

Non-participant observation: to assess the effect of the application of the independent variable: the Vibrato technique, on the dependent variable: Musical interpretation.

Document review: this was used in the initial stages of the research to confirm the existence of a research problem. The student's academic results and the vibrato technique's planning were reviewed.

Mathematical statistics

Descriptive statistics are used, especially frequency distribution. Tables are constructed for a better understanding of the results obtained. In addition, inferential statistics are also used, particularly the nonparametric Wilcoxon Signed Ranks test; the latter was processed using the SPSS statistical program for Windows version 20.

**Population and sample**

For the research, the population was 12 students enrolled at the Universidad Nacional Daniel Alomía Robles of the trombone specialty during the I Semester of the 2018 academic year, being from the I Cycle to the X Cycle, which all were the object of research, so a population study was carried out, according to criteria of (Gómez et al., 2020). They were subjected to a group of observations to know the effectiveness of the investigated technique. Table 1 shows the distribution of the students according to the cycle they are studying.

Table 1. List of students who are part of the matching sample.

Source: 2018 enrollment payroll.

| CYCLE | Students |
|---|---|
| I | 03 |
| III | 02 |
| V | 03 |
| VII | 02 |
| IX | 02 |
| TOTAL | 12 |

**Brief characteristics of the vibrato technique**

The vibrato technique is a set of processes to be developed with students of the trombone specialty, consisting mainly in the consolidation of the air column, embouchure and intonation, since the first two elements are essential for the realization of vibrato, keeping the intonation controlled, and are concretized with the planning, execution and evaluation of the vibrato.

## RESULTS AND DISCUSSION

This section presents the results obtained from the pre-experiment. For its development, the methodological steps described above are retaken, and each one of them is developed.

Step 1. Planning

At this point of the research, the statistical hypothesis to be worked on was stated, which was formulated as follows:

$H_0$: The application of the vibrato technique if it is practical for the development of the musical interpretation of students of the trombone specialty of the Universidad Nacional Daniel Alomía Robles de Huánuco, semester I-2018.

$H_1$: The application of the vibrato technique is ineffective for developing the musical interpretation of the students of the trombone specialty of the Universidad Nacional Daniel Alomía Robles de Huánuco, semester I-2018.

The independent variable is The application of the vibrato technique.

The dependent variable is the development of the musical interpretation of trombone students.

For the selection of the indicators, those raised by (Marcellini, 2018) are assumed: musical interpretation; literal musical interpretation; subjective musical interpretation; objective musical interpretation.

Step 2. Development

The results obtained for each of the indicators above are presented below.

Results of the musical interpretation indicator

Table 2. Results of the musical interpretation indicator

Source: observation protocol

| Students | Formerly | | Then | |
|---|---|---|---|---|
| | Score | Percentage | Score | Percentage |
| **1** | 14 | 52 | 19 | 70 |
| **2** | 14 | 52 | 17 | 63 |
| **3** | 14 | 52 | 16 | 59 |
| **4** | 16 | 59 | 23 | 85 |
| **5** | 18 | 67 | 26 | 96 |
| **6** | 15 | 56 | 22 | 81 |
| **7** | 13 | 48 | 20 | 74 |
| **8** | 17 | 63 | 21 | 78 |
| **9** | 18 | 67 | 20 | 74 |
| **10** | 17 | 63 | 25 | 93 |
| **11** | 14 | 52 | 21 | 78 |
| **12** | 10 | 37 | 16 | 59 |

As illustrated in Table 1, the results before applying the investigated technique were lower in the investigated students since the average score was 15, with an oscillation between 14 and 16. The average score was 15, with an oscillation between 14 and 16. However, once this research proposal was implemented, increases were observed in all the students investigated since the average score was 20.5 higher than before. This shows the level of effectiveness of the proposal presented.

Results of the literal musical interpretation indicator

Table 3. Results of the literal musical interpretation indicator

Source: observation protocol

| Students | Formerly | | Then | |
|---|---|---|---|---|
| | Score | Percentage | Score | Percentage |
| **1** | 4 | 44 | 5 | 56 |
| **2** | 3 | 33 | 5 | 56 |
| **3** | 6 | 67 | 7 | 78 |
| **4** | 3 | 33 | 5 | 56 |
| **5** | 5 | 56 | 8 | 89 |
| **6** | 6 | 67 | 6 | 67 |
| **7** | 4 | 44 | 7 | 78 |
| **8** | 5 | 56 | 5 | 56 |
| **9** | 4 | 44 | 7 | 78 |
| **10** | 4 | 44 | 4 | 44 |
| **11** | 3 | 33 | 4 | 44 |
| **12** | 4 | 44 | 5 | 56 |

The results in Table 2 also show the students' improvement after applying the investigated technique. In the initial moment, there was an average score of 4.25, with grades varying between 4 and 5. However, the second moment was very different, where the average rose to 5.6 with grades between 7 and 8. This makes it evident that there was a transformation in the sample studied at this moment.

Results of the subjective musical interpretation indicator

Table 3. Results of the subjective musical interpretation indicator

Source: observation protocol

| Students | Formerly | | Then | |
|---|---|---|---|---|
| | Score | Percentage | Score | Percentage |
| 1 | 5 | 56 | 7 | 78 |
| 2 | 4 | 44 | 5 | 56 |
| 3 | 4 | 44 | 7 | 78 |
| 4 | 5 | 56 | 8 | 89 |
| 5 | 4 | 44 | 5 | 56 |
| 6 | 3 | 33 | 6 | 67 |
| 7 | 5 | 56 | 7 | 78 |
| 8 | 4 | 44 | 6 | 67 |
| 9 | 3 | 33 | 4 | 44 |
| 10 | 3 | 33 | 6 | 67 |
| 11 | 3 | 33 | 5 | 56 |
| 12 | 3 | 33 | 6 | 67 |

The results of the subjective musical interpretation indicator are shown in Table 3, where, as in the previous indicators, there is a low qualification of the students at the initial moment of the research. The average score of the sample studied was 3.8, with grades ranging between 4 and 5. Once the technique presented in this study was applied, superior results were observed in the second stage of the research. There was an increase in the average of grades to 6, with an oscillation of scores between 6 and 7, also higher than at the initial moment. This shows the effectiveness of the proposal also in this indicator.

Results of the objective musical interpretation indicator

Table 4. Results of the objective musical interpretation indicator

Source: observation protocol

| Students | Formerly | | Then | |
|---|---|---|---|---|
| | Score | Percentage | Score | Percentage |
| 1 | 4 | 44 | 7 | 78 |
| 2 | 5 | 56 | 7 | 78 |
| 3 | 3 | 33 | 6 | 67 |
| 4 | 5 | 56 | 7 | 78 |
| 5 | 5 | 56 | 6 | 67 |
| 6 | 4 | 44 | 7 | 78 |
| 7 | 4 | 44 | 6 | 67 |
| 8 | 3 | 33 | 5 | 56 |
| 9 | 3 | 33 | 6 | 67 |
| 10 | 3 | 33 | 4 | 44 |
| 11 | 5 | 56 | 8 | 89 |
| 12 | 4 | 44 | 7 | 78 |

When analyzing the indicator in Table 2, it is evident that there were low scores in the students before applying the technique investigated. Most of them were between 4 and 5, which denotes a low level of musical interpretation. However, once the technique presented in this research was applied, there was an important transformation in the sample. There was an increase in all the students investigated and their grades were mostly higher. The average was 6.3, with scores of 7 and 8. This shows that this technique is effective in this indicator.

Validation of the study

Inferential statistical analysis was performed to test the hypothesis, particularly the nonparametric Wilcoxon Signed Ranks test, whose results were interpreted with the SPSS statistical processor for Windows version 20, as shown in Tables 5 and 6.

Table 5. Results of the nonparametric Wilcoxon Signed Ranges Test

Source: SPSS Statistical Processor for Windows version 20

Ranges

| | | N | Average range | Sum of ranks |
|---|---|---|---|---|
| POST - PRE | Negative ranges | 0a | ,00 | ,00 |
| | Positive ranges | 12b | 10,50 | 210,00 |
| | Ties | 0c | | |
| | Total | | | |

a. POST < PRE

b. POST > PRE

c. POST = PRE

Table 6. A statistical significance level of the nonparametric Wilcoxon Signed Ranges Test

Source: SPSS Statistical Processor for Windows version 20

Test statistics [a]

| | POST - PRE |
|---|---|
| Z | -3,933b |
| Asymptotic sign (bilateral) | ,000 |

a. Wilcoxon signed-rank Wilcoxon test.

When analyzing the results of the inferential statistics, it can be stated that there was a high significance level since Table 6 shows p 0.00. This reveals the validity of the results obtained; thus, the hypothesis formulated is accepted.

Step 3. Conclusion

Following the results analyzed above, the following hypothesis can be accepted:

$H_{0:}$ The application of the vibrato technique if it is effective for the development of the musical interpretation of students of the trombone specialty of the Universidad Nacional Daniel Alomía Robles de Huánuco, semester I-2018.

Therefore, the results obtained are valid and reflect the effectiveness of the vibrato technique in the sample of students investigated. In addition, it meets the requirements to be generalized to other similar samples.

Some of the authors of the scientific community have obtained results similar to those of our study or have addressed aspects that served as support for its elaboration. Such is the case of the classic author of this subject (Merleau, 1993), who formulated the first approximation of the relationship between music/oral language in this summarized statement: music and languages have rhythm and melody in common, but only music uses harmony. This is an important theoretical foundation for our research because it is the basis for developing musical interpretation.

Another author investigated aspects related to this topic (Rodríguez, 2017) since he contributed to improving music teaching in the classroom as a transforming element that builds subjectivities. These results are, in a general way, the theoretical bases of the research. The major difference between the two studies is that these authors do not make explicit how to evaluate the vibrato technique. This is something that the results of our study make explicit both in the scoring system used and in the way of applying the statistics.

On the other hand, Marcellini (2018) delves into the essential aspects of musical interpretation, who considers that these are: Literal Interpretation, Subjective Interpretation and Objective Interpretation. As evidenced in the results obtained in our study, the indicators raised by this author were taken into consideration, with the difference of the type of analysis carried out where a pre-experiment is applied to know the effectiveness of the vibrato technique.

## CONCLUSIONS

Following the theoretical and methodological foundations that support the application of the vibrato technique to develop the musical interpretation of trombone specialty students, the need to assess its effectiveness in music education was demonstrated.

The results obtained after finishing the pre-experiment used, showed the existence of a high level of statistical significance because it was possible to accept the hypothesis that the application of the vibrato technique is effective for the development of the musical interpretation of students of the trombone specialty of the National University Daniel Alomía Robles of Huanuco, semester I-2018.

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