

# Improvisation of Music Therapy with Repertoire of Marineras Trujillanas in Online Higher Education Learning

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**Abstract**—University students face and faced cases of anxiety, stress, shyness in front of the public which caused effects on learning and if it was online learning were stronger those negative effects, so the improvisation music therapy with workshops had to intervene as a fundamental tool in online learning, the objective of this research was to analyze the results of the development of an improvisation music therapy program, with Peruvian marinera repertoire in general studies students of the music workshop of the National University of Trujillo with a total of 133 out of 156 participants using the methodology of the online survey resulted in significant effects and group participation of the students of the music workshop. It was concluded that music therapy significantly helps students to improve their self-esteem, motivates them to continue studying, motivates them to participate and/or relate to their environment and decreases stress and anxiety.

**Keywords**—music therapy, repertoire, learning, musical improvisation

## 1 Introduction

The influence of music therapy and music in education is a consequence of George N. Heller (1941-2004), who stimulated the research of both students and colleagues [1] taking music as a potential element in the teaching and activities of children which has shown positive effects on mental, social and emotional development; thus achieving the use of music in medical and therapeutic cases in these times [2]. The efficiency for the physical and artistic body re-education had positive effects also in the cognitive, socio-affective and emotional during the treatment with mental health patients, whose only instrument of treatment was music and rhythmic movements [3], with only exploring the sensory stimuli many patients recovered their motor function [4].

Philosophy and musical epistemology in Islamic culture are two comparisons that scholars study, as there is controversy whether or not to incorporate it into academic education because there is no legal and/or authenticated evidence of music therapy in medical treatments. But even so it is applied in many hospitals in the East [5], music therapists have historically only focused on tools that other areas (health sciences) used for their evaluation, limiting themselves in cognition, motor skills, communication and other areas of their own interest [6].

In the education sector, music therapy techniques have been practiced for the development of socioemotional learning, where the student achieves attitudes, skills, positive goals, empathy and begins to relate to society to achieve a positive academic performance, a useful life and above all a good student welfare [7], therefore, in this research assessment instruments were applied to measure emotional skills in adolescent students where they manifested their multifaceted totality [8].

The student who presents burnout due to stress faces the situation both positively (playing sports, cooking, listening to music and interacting in social networks) and negatively (overeating, drinking alcoholic beverages, playing video games) and even more so when the curriculum does not favor them [9], including the risks due to the pandemic and this is where music is presented as a therapy and as an effective strategy to cope with socioemotional situations and identifying the importance of music therapy [10], in these times of pandemic music therapy was practiced and worked online in two sectors (social medical and educational medical) using ICT and digital devices to better understand [11].

Learning from infancy to adulthood develops naturally with multiple cognitive skills and multifunctional independence finding a better benefit for adults, this simultaneous learning with multiple skills demonstrates feasibility, great potential and high impact [12]. Executive function had a negative development in children with hearing impairment, but had positive effects on memory work and performance skills [13]. One of the threats in young people and adolescents is anxiety, whose solution in the research was musical esteem [14], as well as intellectual disability in the area of reading competence could be improved in educational institutions in Nigeria with music therapy, achieving skills and reading improvements in students [15]; these therapy strategies in music education combined with pedagogical approaches involve and positively influence children's learning [16].

There are mechanisms that humans can interpret on the intentions that generate deficiencies in interaction and communication, because the brain through its functional activities builds simulations whose significant and positive effects come from music [17], stress due to anxiety and fear by the outbreak of Covid-19 affected teachers as it also affected the day to day problems in health affecting the economy and forcing to make a change of life such as attending a music therapy to reduce stress [18].

Music therapy is part of the interdisciplinary science and art whose difference with music education tends to improve and develop non-musical skills for personal and emotional growth of people with the help of the areas of psychology and pedagogy; music improvisation (technical therapy, free therapy and creative music) were used for special education playing a very important role for the growth of skills [19], this is how it was explored and had experiences in learning with music therapy and role playing where

learning experiences were identified (personality to be professional, to be prepared and spontaneous, mutual feedback, theoretical and experiential learning) [20], because the return to classes will give a permanent opportunity to learn and achieve impact results [21] with the construction of the inter personal therapy that contains patterns and guides positive and negative change were achieved [22], deep learning in music therapy is used in treatments with autistic children using interactive robots, where relevant points requested by pedagogy are explained and defined, the study of music therapy with electroencephalogram is done [23].

Adolescent depression is being combated with music therapy in different institutions because it helps to improve emotions and achieve positive effects with the tasks assigned [24], music therapy is a strategy of effective results that reduce stress, which were realized by combining together with virtual reality using mobile applications [25] whose acceptance by university students is voluntary and positive because the effects were positive mental state, mental resilience, improved quality of life, self-identification and the elimination of depression [26], this effect is occurring at the level of university students managing to detect moderate and mild cases and treated before having more bad repercussions [27], because since the arrival of Covid-19 music therapy has been occurring with an infinite number of virtual formats (asynchronous and synchronous) [28].

In Peru there is already evidence of the benefits of music therapy in university students who improved significantly (stress reduction, better concentration, good academic performance, relaxation, better self-esteem, self-control, good quality interpersonal relationships) [29]. Music therapy is observed as a marginal subject, but it is known more as an alternative therapy method which is helping university students in mental health [30].

## **2 Justification and objectives of the study**

The presence of Covid-19 was the cause of many illnesses in both psychological and mental health, so a solution is sought and even more so in the case of university students who suffered serious consequences due to lack of timely intervention, so that university students suffered from poor academic performance, low self-esteem, poor behavior in society, but felt comfortable when they saw or heard presentations of groups dancing marinera trujillana. Therefore, it was decided to conduct the research using music therapy in university classrooms in the music workshop, which will include musical improvisation of marineras singing them, dancing them individually or in groups and thus, observe the effects caused by music therapy in online learning, music therapy was chosen as a key element in online learning because of the ease and access that can be counted on and for having knowledge that it is a means of relaxation for mental health. The purpose of this research is to provide knowledge for the scientific community in music therapy in times of Covid-19. Then seeing the current situation of stress, the contribution that generates the sea music and the online education we set as main objective to know the perspectives of the effects that cause the improvisation of music in

the classes as part of their daily and university learning. Then the following specific objectives were raised:

- To identify frequencies, rating means regarding students' perceptions of music therapy.
- To describe the effects of music therapy on the cognitive development of university students.

### **3 Methodology**

The methodology used in this research was descriptive, correlational, explorative and observational [31].

#### **3.1 Sample**

The improvisation music therapy workshop with a repertoire of marineras trujillanas was developed during 8 sessions for 156 students (at the beginning) and ended with 133 students (at the end of the workshop sessions) of general studies of the music workshop of the National University of Trujillo. They belong to the professional schools of Architecture, Agriculture, Systems, Tourism, Archaeology, Anthropology, Social Work, Medicine, Chemistry, Mechatronics, Statistics, Physics and Stomatology.

Two tests were taken, one at the beginning (156 participants) and the other after the workshops (133 participants). The test was the same at the beginning and end of the workshops, with the participation of males (63) and females (70) representing 47.4% and 52.6% respectively of the participants, all of whom are students of the National University of Trujillo in general studies.

#### **3.2 Instrument**

The data were collected using the instrument [32], which was validated with qualitative and quantitative tests, this validation instrument contains nine questions (BE: achieve a better state of emotional well-being; CM: know yourself better; RC: relate to your peers in group improvisations; ICE: increase my listening skills; MEM: Increase my degree of motivation towards my studies in the music workshop; DIM: enjoy playing a musical instrument more; DNE: decrease my stress level; DNA: decrease my anxiety level and DC: develop my creativity) that answer the question: Do you think the music therapy sessions will help you? question asked at the beginning of the research and the question asked at the end of the workshops were the same (BE, CM, RC, ICE, MEM, DIM, DNE, DNA and DC) that answered the question: Do you think the music therapy sessions helped you? question asked after receiving the 8 workshop sessions.

In both the baseline and exit tests, the answers were made up of three alternatives: Yes, Maybe and No. The research instrument with nine dimensions has nine dimensions.

The research instrument with nine dimensions has the intention of measuring the level of university wellbeing, knowing oneself, relating to groups of friends, listening to others, motivating oneself to improve one's studies, enjoying the melodies of musical instruments, avoiding stress and anxiety in these times, and finally, developing one's creativity. According to the original work the valid scales are obtained and in our research we have that Cronbach's Alpha is equal to .872 resulting also valid in its Peruvian version for university students from Trujillo, in this research valid statistics were obtained such as: Anova with Tukey's test for non-additivity whose sum of squares is 152.151,  $gl=155$ , between elements  $F=12.580$  and  $sig=.000$ . Hotelling's T-squared test 76.897  $F=9.178$ . With mean and standard deviation respectively CM (2.45, 0.635); BE (2.65, 0.506), RC (2.75, 0.463), ICE (2.83, 0.422), MEM (2.65, 0.542), DIM (2.78, 0.472), DNE (2.65, 0.529), DNA (2.56, 0.559) and DC (2.74, 0.480).

### **3.3 Procedure and data analysis**

The research begins in August 2021 at the beginning of classes at the National University of Trujillo, the aims and objectives of the research were established to then perform an entry test on the perspective of improvisation of music therapy through an online survey to all those who attended the course of Music Workshop of the I cycle, the online survey was done anonymously and voluntarily with a conventional sample. Once the classrooms with which the workshop would be applied were selected, we proceeded to explain them in eight class sessions that were designed to apply the improvisation techniques in individual and group modality.

We began by inviting the director of the music band that is in charge of the execution of the 42 marineras that are danced in the world festival of marinera trujillana. In addition, we worked sessions related to the interaction and search of the marineras in question where the student selected a marinera that most identified with it because of the message of its lyrics, because as a child he had danced it or listened to it when his parents took him to the world festival. The marineras were sung and rhythmically accompanied with percussion instruments that had been created by the students in a process of discovering sounds when he had climbed a tree to pick up seeds, when he hit a can, etc.

There were also groups that additionally sang and accompanied rhythmically, danced with their families and friends. The imitated or created musical improvisation was applied in the introduction of the marineras that the groups selected. As an act of intellectual honesty we must point out that in this research we could observe that the individual work sessions were not welcomed by the students, however, those leading to a group work, collaborative, stood out significantly. Afterwards, 133 students were surveyed out of the 156 that participated at the beginning of the research, the survey was conducted in the same way, voluntary, online and conventional, the surveys were conducted using the Google Form instrument, since it allows us to have a better reach and it is faster and can be shared by different means. It was configured that the survey could only be answered by one person, to avoid duplication of responses, so we used only institutional emails.

Once we had the entire database with the respective responses in the same Google Form, we downloaded the Excel file to format it and used SPSS version 25, managing to analyze the respective data and tests.

Finally, it should be noted that the use of a repertoire of marineras trujillanas was a key point in this research because the students identified with it as a dance they had heard since they were children and already had prior knowledge about it. Let us remember that Trujillo, the geographic space where this research was conducted, was considered the national capital of the marinera since January 24, 1986, by means of Law No. 24447.

#### 4 Results

The analyses of the data descriptively in each of the dimensions show high mean type valuations, the means of all are above 2.45. The lowest dimension was CM, which refers to "getting to know yourself better" and the highest was ICE, which refers to "increasing listening skills" and achieving concentration in order to enjoy musical improvisations.

Table 1 shows the descriptive data of the dispersion measures of each studied dimension evaluated before (entrance test) applying the improvisation sessions.

**Table 1.** Distribution of dispersion measures (input test)

|           | BE                | CM                | RC                | ICE               | MEM               | DIM               | DNE               | DNA               | DC                |
|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| N Valid   | 156               | 156               | 156               | 156               | 156               | 156               | 156               | 156               | 156               |
| Mean      | 2,65              | 2,45              | 2,75              | 2,83              | 2,65              | 2,78              | 2,65              | 2,56              | 2,74              |
| Median    | 2,66 <sup>a</sup> | 2,49 <sup>a</sup> | 2,76 <sup>a</sup> | 2,85 <sup>a</sup> | 2,67 <sup>a</sup> | 2,80 <sup>a</sup> | 2,67 <sup>a</sup> | 2,58 <sup>a</sup> | 2,76 <sup>a</sup> |
| Mode      | 3                 | 3                 | 3                 | 3                 | 3                 | 3                 | 3                 | 3                 | 3                 |
| Deviation | ,506              | ,635              | ,463              | ,422              | ,542              | ,472              | ,529              | ,559              | ,480              |
| Variance  | ,256              | ,404              | ,215              | ,178              | ,294              | ,223              | ,279              | ,313              | ,231              |
| Skewness  | -,924             | -,722             | -1,554            | -2,552            | -1,225            | -2,093            | -1,175            | -,791             | -1,645            |
| Kurtosis  | -,462             | -,470             | 1,356             | 6,127             | ,533              | 3,721             | ,365              | -,408             | 1,813             |

Table 2 shows the descriptive data of the dispersion measures of each studied dimension evaluated afterwards (exit test) after applying the improvisation sessions.

**Table 2.** Distribution of the dispersion measures (exit test)

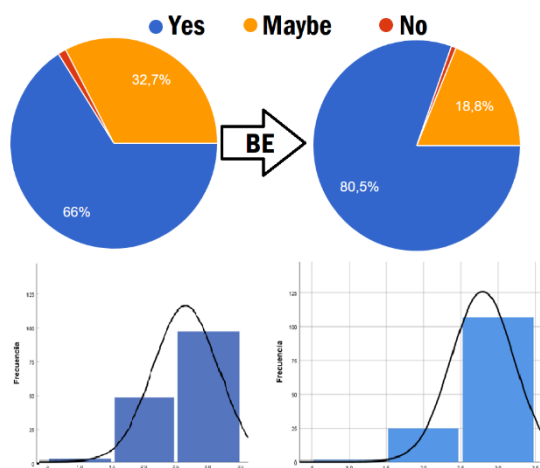
|           | BE                | CM                | RC                | ICE               | MEM               | DIM               | DNE               | DNA               | DC                |
|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| N Valid   | 133               | 133               | 133               | 133               | 133               | 133               | 133               | 133               | 133               |
| Mean      | 2,65              | 2,80              | 2,76              | 2,92              | 2,90              | 2,82              | 2,85              | 2,71              | 2,68              |
| Median    | 2,66 <sup>a</sup> | 2,80 <sup>a</sup> | 2,78 <sup>a</sup> | 2,92 <sup>a</sup> | 2,91 <sup>a</sup> | 2,83 <sup>a</sup> | 2,87 <sup>a</sup> | 2,74 <sup>a</sup> | 2,72 <sup>a</sup> |
| Mode      | 3                 | 3                 | 3                 | 3                 | 3                 | 3                 | 3                 | 3                 | 3                 |
| Deviation | ,506              | ,422              | ,495              | ,303              | ,323              | ,405              | ,417              | ,547              | ,569              |
| Variance  | ,256              | ,178              | ,245              | ,092              | ,104              | ,164              | ,174              | ,300              | ,324              |
| Skewness  | -,924             | -1,796            | -1,959            | -3,864            | -3,405            | -2,022            | -2,875            | -1,727            | -1,642            |
| Kurtosis  | -,462             | 2,099             | 3,109             | 15,728            | 11,877            | 3,109             | 8,027             | 2,084             | 1,728             |

Table 3 represents the correlation between the dimensions studied after the improvisation workshops.

**Table 3.** Distribution of the correlation between dimensions

|     | BE   | CM   | RC   | ICE  | DNA  | DC   | DIM  | DNE  | MEM |
|-----|------|------|------|------|------|------|------|------|-----|
| BE  |      |      |      |      |      |      |      |      |     |
| CM  | ,490 |      |      |      |      |      |      |      |     |
| RC  | ,223 | ,170 |      |      |      |      |      |      |     |
| ICE | ,354 | ,231 | ,382 |      |      |      |      |      |     |
| DNA | ,551 | ,535 | ,243 | ,408 |      |      |      |      |     |
| DC  | ,394 | ,397 | ,467 | ,489 | ,414 |      |      |      |     |
| DIM | ,470 | ,411 | ,501 | ,509 | ,373 | ,438 |      |      |     |
| DNE | ,593 | ,549 | ,218 | ,394 | ,795 | ,367 | ,369 |      |     |
| MEM | ,449 | ,500 | ,310 | ,444 | ,540 | ,480 | ,600 | ,579 |     |

Figure 1 shows the progress (graphically) that was achieved after the improvisation workshop sessions, obtaining a significant increase in emotional well-being, increasing the perspective (in a positive way) of university students and reducing the doubts they had about the improvisation music therapy with the Peruvian marinera repertoire in the general studies students of the music workshop of the National University of Trujillo. Likewise, it shows a significant advance for being the first experience made of music therapy in virtual modality. On the other hand, it is supported by what was stated by the teacher who carried out the application of the program, who observed a positive progressive performance in the application of the program.



**Fig. 1.** Emotional well-being

Figure 2 shows the progress (graphically) that was achieved after the improvisation workshop sessions, obtaining a significant increase in the aspect of knowing each other

better, increasing the perspective (in a positive way) of the university students and reducing the doubts they had about the improvisation music therapy with the Peruvian marinera repertoire in the general studies students of the music workshop of the National University of Trujillo. Likewise, it shows a significant advance for being the first experience made of music therapy in virtual modality. On the other hand, it is supported by what was stated by the teacher who carried out the application of the program, who observed a positive progressive performance in the application of the program.

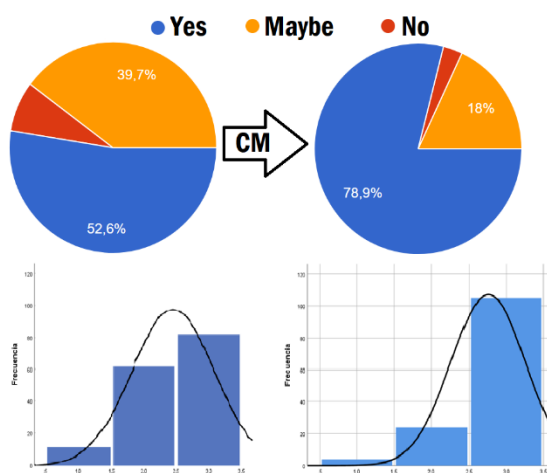
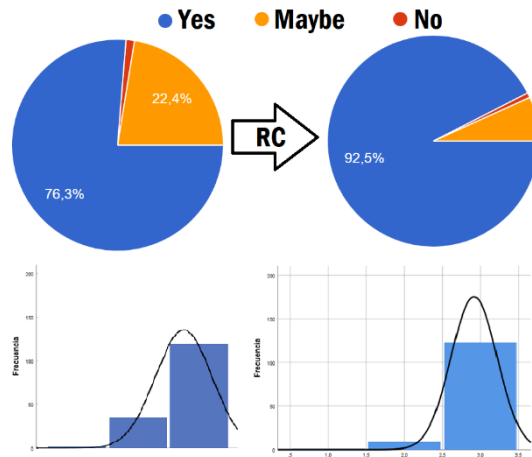


Fig. 2. Knowing oneself better

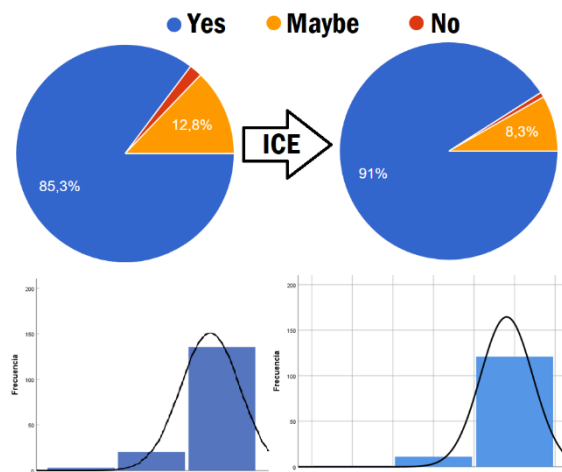
Figure 3 shows the progress (graphically) that was achieved after the improvisation workshop sessions, obtaining a significant increase in the aspect of being able to relate with their peers in group improvisations, increasing the perspective (in a positive way) and the relationship they had with their fellow university students and reducing the doubts they had about the improvisation music therapy with the Peruvian marinera repertoire in the general studies students of the music workshop of the National University of Trujillo. Likewise, it shows a significant advance for being the first experience made of music therapy in virtual modality. On the other hand, it is supported by what was stated by the teacher who carried out the application of the program, who observed a positive progressive performance in the application of the program.





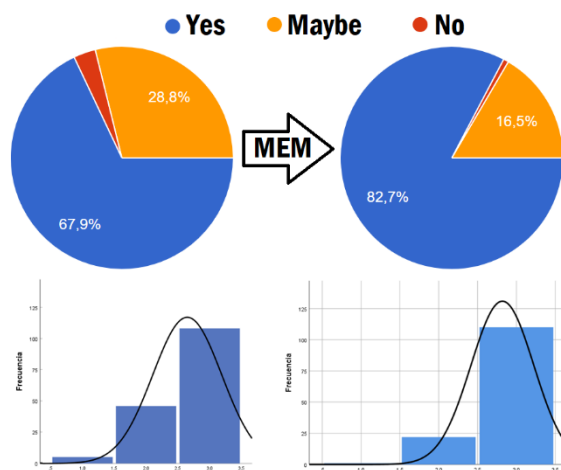
**Fig. 3.** Interacting with peers in group improvisations

Figure 4 shows the progress (graphically) that was achieved after the sessions of the improvisation workshop, obtaining a significant increase in the aspect of increasing their capacity to listen, increasing the perspective (in a positive way) with the university students and reducing the doubts they had about the improvisation music therapy with the Peruvian marinera repertoire in the general studies students of the music workshop of the National University of Trujillo. Likewise, it shows a significant advance for being the first experience made of music therapy in virtual modality. On the other hand, it is supported by what was stated by the teacher who carried out the application of the program, who observed a positive progressive performance in the application of the program.



**Fig. 4.** Increasing listening skills

Figure 5 shows the progress (graphically) that was achieved after the sessions of the improvisation workshop, obtaining a significant increase in the aspect of increasing the degree of motivation towards studies in the music workshop; managing to increase the perspective (in a positive way) and motivating the university students to study and reducing the doubts they had about the improvisation music therapy with the repertoire of the Peruvian marinera in the students of general studies of the music workshop of the National University of Trujillo. Likewise, it shows a significant advance for being the first experience made of music therapy in virtual modality. On the other hand, it is supported by what was stated by the teacher who carried out the application of the program, who observed a positive progressive performance in the application of the program.



**Fig. 5.** Increase in the degree of motivation towards studies in the music workshop

Figure 6 shows the progress (graphically) that was achieved after the sessions of the improvisation workshop, obtaining a significant increase in the aspect of enjoying more the interpretation of a musical instrument in the music workshop; managing to increase the perspective (in a positive way) of the musical delight as university students and reducing the doubts they had about the improvisation music therapy with repertoire of the Peruvian marinera in the students of general studies of the music workshop of the National University of Trujillo. Likewise, it shows a significant advance for being the first experience made of music therapy in virtual modality. On the other hand, it is supported by what was stated by the teacher who carried out the application of the program, who observed a positive progressive performance in the application of the program.

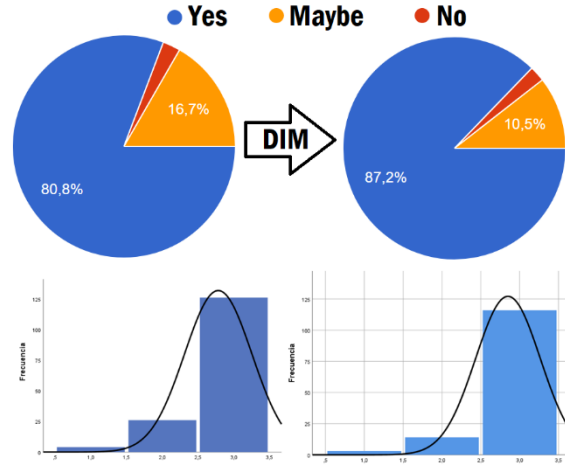


Fig. 6. Enjoying performance with a musical instrument

Figure 7 shows the progress (graphically) that was achieved after the sessions of the improvisation workshop, obtaining a significant increase in the aspect of managing to reduce my stress level with the music workshop; managing to reduce the perspective (in a positive way) of university stress and reducing it with music therapy workshops with improvisation of repertoires of the Peruvian marinera in the students of general studies of the music workshop of the National University of Trujillo. Likewise, it shows a significant advance for being the first experience carried out in music therapy in virtual modality. On the other hand, it is supported by what was stated by the teacher who carried out the application of the program, who observed a positive progressive performance in the application of the program.

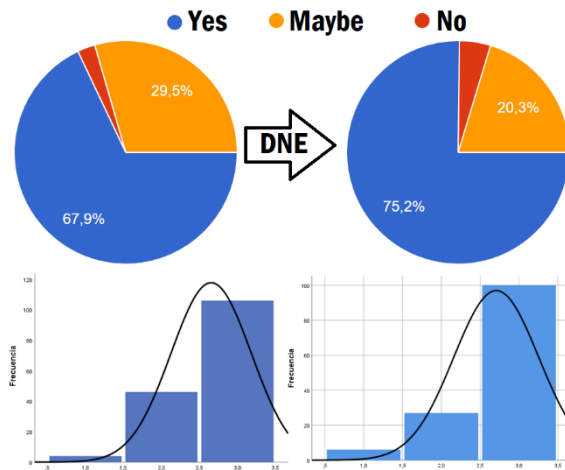
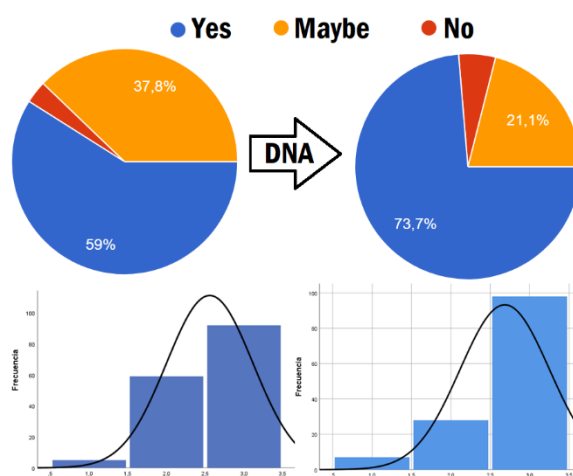


Fig. 7. Decrease in stress levels

Figure 8 shows the progress (graphically) that was achieved after the sessions of the improvisation workshop, obtaining a significant increase in the aspect of achieving a decrease in the level of anxiety with the music workshop; managing to decrease the perspective (in a positive way) of university anxiety and reducing it with music therapy workshops with improvisation of repertoires of the Peruvian marinera in the students of general studies of the music workshop of the National University of Trujillo. Likewise, it shows a significant advance for being the first experience carried out in music therapy in virtual modality. On the other hand, it is supported by what was stated by the teacher who carried out the application of the program, who observed a positive progressive performance in the application of the program.



**Fig. 8.** Decrease in the Anxiety Level

Figure 9 shows the progress (graphically) that was achieved after the sessions of the improvisation workshop, obtaining a significant increase in the aspect of achieving that they develop their creativity with the music workshop; managing to diminish the perspective (in a positive way) of their doubts with respect to the music therapy workshops with improvisation of repertoires of the Peruvian marinera in the students of general studies of the music workshop of the National University of Trujillo. Likewise, it shows a significant advance for being the first experience made of music therapy in virtual modality. On the other hand, it is supported by what was stated by the teacher who carried out the application of the program, who observed a positive progressive performance in the application of the program.

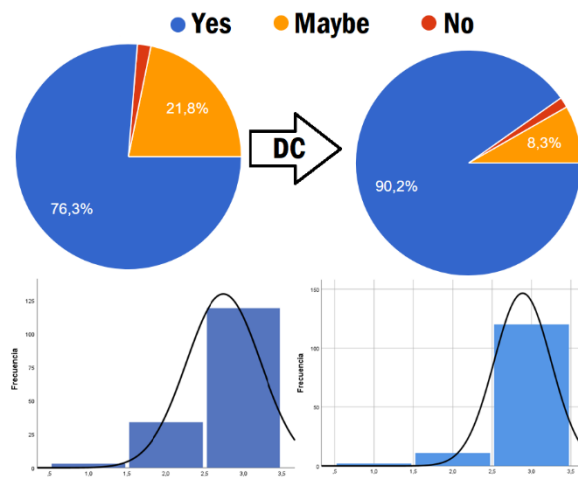


Fig. 9. Development of creativity

## 5 Discussions

When the happiness of the student is achieved to want to participate in activities that involve music therapy which generates independence, imagination, creativity and willingness to work [2], many other students are intimidated by embarrassment and decide not to continue, this fact is seen with a minimum number of students and are those who work and do not have time to participate in these activities.

Rhythmic movements with music have positive responses to self-esteem, creativity, memory and verbal expressive movements [3], that is why many students agree to take a music course or workshop at universities (to feel better) and these university workshops sometimes only have limited vacancies which makes students take refuge in things or activities that are not productive for society.

Music therapy will be present with patients of physiotherapy and stroke and other brain disorders, hoping to achieve in the near future the use of self-generated vocal signals [4] for students who need the use of these signals and to support recovery with these workshops and generate an emotional, psychological and family welfare for the good of society. Music therapy has been causing a lot of research because of the controversies it has [5].

This research can be used for future research as a basis for the theoretical framework of emotional skills in adolescent students, because the measurement instrument is optimal for replication as well as the results of the tools will be of theoretical basis in music therapy [8].

It is suggested to investigate more on stress, student burnout and possible solutions to reduce this evil that afflicts students and achieve a better academic result [9], as well as it is suggested to expand dance, music and other workshops in university classrooms as they keep students relaxed and carefree because it avoids stress, burnout and others that cause mental health discomfort.

The importance of emphasizing music in times of crisis has more positive than negative effects [10], because even in therapeutic devices showed positive and significant effects with the participation of patients [16] where electroencephalogram signals were used and showed that there are differences between people when perceiving music [23]. The combination of music therapy and virtual reality [25] could be anti-stress because it helps to take the mind off social and family pressures.

## 6 Conclusion

The participation of ICTs in order to have therapeutic musical meetings with significant values is being practiced in these times of Covid-19, but with little participation because they prefer to participate directly in face-to-face meetings of music therapy and if it is with improvised music from the repertoires of the marinera trujillana it is more exciting because one does not expect to hear the same music that one listens at home, but it is selected music that fills the soul and comforts the mental health. The many effects of music therapy are not fully studied due to the lack of instruments to measure the effects, because we only rely on statistical or observational tests in study groups that participate voluntarily.

It can also be concluded that music therapy is a useful method to reduce anxiety in people and not only in students as it was in this research or as it is used in some medicinal therapies, music therapy helps to maintain mental health in an optimal state to communicate better among friends, to fill our motivation to continue studying and to identify ourselves with the music we once listened to as children and / or participate with a dance.

That music therapy is presented as prevention and implementation in higher education to preserve mental health and to avoid the negative effects that can cause as student dropout, shyness, self-enclosure, bad company or go down the path of evil, music therapy helps to improve our social welfare.

## 7 References

- [1] Grady, M.L. (2020). "Who Are These People and Why Are They Saying These Things?": George Heller and the Growth of Historical Research in Music Education. *Journal of Historical Research in Music Education*, 42 (1), pp. 6-28. <https://doi.org/10.1177/1536600619876112>
- [2] Metić, M., Svalina, V. (2020). Potential use of music therapy elements in music teaching. *Metodicki Ogledi*, 27 (1), pp. 149-173. <https://doi.org/10.21464/MO.27.1.12>
- [3] Del Barrio Aranda, L., Arús Leita, E. (2020). Dalcroze eurhythmics - music in motion - as a strategy of body re-education and psychosocial rehabilitation in people with mental health problems. *Artseduca*, (27), pp. 186-198. <https://doi.org/10.6035/ARTSEDUCA.2020.27.14>
- [4] Ruotsalainen, J., Carlson, E., Erkkilä, J. (2022). Rhythmic exercises as tools for rehabilitation following cerebellar stroke: A case study integrating music therapy and physiotherapy techniques. *Nordic Journal of Music Therapy*. <https://doi.org/10.1080/08098131.2022.2026452>

- [5] Sidek, R.S., Kamaruzaman, A.F., Abdulah, M.J. (2021) Epistemology and philosophy related to music therapy from the Muslim scholars' perspective. *International Journal of Islamic Thought*, 19 (1), pp. 110-119. <https://doi.org/10.24035/IJIT.19.2021.201>
- [6] Bradt, J. (2022). Music therapy assessments. *Nordic Journal of Music Therapy*, 31 (1), pp. 3-6. <https://doi.org/10.1080/08098131.2022.2016152>
- [7] Váradi, J. (2022). A Review of the Literature on the Relationship of Music Education to the Development of Socio-Emotional Learning. *SAGE Open*, 12 (1). <https://doi.org/10.1177/21582440211068501>
- [8] Salokivi, M., Salanterä, S., Ala-Ruona, (2022). E. Scoping review and concept analysis of early adolescents' emotional skills: Towards development of a music therapy assessment tool. *Nordic Journal of Music Therapy*. <https://doi.org/10.1080/08098131.2021.1903977>
- [9] Brooke, T., Brown, M., Orr, R., Gough, S. (2020). Stress and burnout: exploring postgraduate physiotherapy students' experiences and coping strategies. *BMC Medical Education*, 20 (1), art. no. 433. <https://doi.org/10.1186/s12909-020-02360-6>
- [10] Fink, L.K., Warrenburg, L.A., Howlin, C., Randall, W.M., Hansen, N.C., Wald-Fuhrmann, M. (2021). Viral tunes: changes in musical behaviours and interest in coronamusic predict socio-emotional coping during COVID-19 lockdown. *Humanities and Social Sciences Communications*, 8 (1), art. no. 180. <https://doi.org/10.1057/s41599-021-00858-y>
- [11] Verdier, N., Genguelou, M., Tromeur-Navaresi, E. (2021) Music therapy in covid-19 context: what adaptations and in what communication dynamics? *Communiquer*, (32). <https://doi.org/10.4000/communiquer.8435>
- [12] Leanos, S., Kürüm, E., Strickland-Hughes, C.M., Ditta, A.S., Nguyen, G., Felix, M., Yum, H., Rebok, G.W., Wu, R. (2020). The impact of learning multiple real-world skills on cognitive abilities and functional independence in healthy older adults. *Journals of Gerontology - Series B Psychological Sciences and Social Sciences*, 75 (6), pp. 1155-1169. <https://doi.org/10.1093/geronb/gbz084>
- [13] Mason, K., Marshall, C.R., Morgan, G. (2021) Executive Function Training for Deaf Children: Impact of a Music Intervention. *Journal of Deaf Studies and Deaf Education*, 26 (4). <https://doi.org/10.1093/deafed/enab026>
- [14] Abraham, V.D., Gatto, F., Justel, N. (2021) Effects of exposure to activating and relaxing music on the emotional state of a population of adolescents. *Hacia la Promoción de la Salud*, 26 (1), pp. 84-97. <https://doi.org/10.17151/hpsal.2021.26.1.8>
- [15] Jacob, U.S., Pillay, J. (2021). Effectiveness of music therapy on reading skills of pupils with intellectual disability. *Cypriot Journal of Educational Sciences*, 16 (1), pp. 251-265. <https://doi.org/10.18844/cjes.v16i1.5526>
- [16] Lee, L., Lin, H.-F. (2020). Music Educational Therapy and the Figurenotes Music Pedagogical Approach for Young Children with Special Needs. *Universal Journal of Educational Research*, 8 (6), pp. 2483-2492. <https://doi.org/10.13189/ujer.2020.080632>
- [17] Silarat, C. (2021). Piano Lessons: Fostering Theory of Mind in ASD Through Imitation. *International Journal of Disability, Development and Education*. <https://doi.org/10.1080/1034912X.2021.1947473>
- [18] Peyee, Y., Wing, C.K., Hwa, P.C. (2021). The effect of music listening and progressive muscle relaxation on the stress level of novice music teachers during coronavirus disease 2019 (Covid-19) in Malaysia. *Harmonia: Journal of Arts Research and Education*, 21 (1), pp. 91-104. <https://doi.org/10.15294/harmonia.v21i1.29679>
- [19] Katušić, A., Burić, K. (2021) Music therapy in educating children with developmental disabilities. *Croatian Journal of Education*, 23 (1), pp. 63-79. <https://doi.org/10.15516/CJE.V23I1.3915>
- [20] Schmid, W., Rolvsjord, R. (2021). Becoming a Reflexive Practitioner: Exploring Music Therapy Students' Learning Experiences with Participatory Role-Play in a Norwegian Context. *Scandinavian Journal of Educational Research*, 65 (5), pp. 864-876. <https://doi.org/10.1080/00313831.2020.1755723>

- [21] Ward, A., Alberg Sorensen, K., Kousgaard, H., Schack Thoft, D., Parkes, J. (2020). Going back to school – An opportunity for lifelong learning for people with dementia in Denmark (Innovative practice). *Dementia*, 19 (7), pp. 2461-2468. <https://doi.org/10.1177/1471301218763190>
- [22] Critchfield, K.L., Thapa, P., Panizo, M.T., Conceição, N. (2022) Using interpersonal reconstructive therapy to address comorbid problems organized by attachment-based learning: The case of Don. *Journal of Clinical Psychology*, 78 (3), pp. 396-408. <https://doi.org/10.1002/jclp.23292>
- [23] Zhang, Y., Zhang, C., Cheng, L., Qi, M. (2022) The Use of Deep Learning-Based Gesture Interactive Robot in the Treatment of Autistic Children Under Music Perception Education. *Frontiers in Psychology*, 13, art. no. 762701. <https://doi.org/10.3389/fpsyg.2022.762701>
- [24] Geipel, J., Koenig, J., Hillecke, T.K., Resch, F. (2022) Short-term music therapy treatment for adolescents with depression – A pilot study. *Arts in Psychotherapy*, 77, art. no. 101874. <https://doi.org/10.1016/j.aip.2021.101874>
- [25] Cabezas, C.A., Arcos, A.R., Carrillo-Medina, J.L., Arias-Almeida, G.I. (2022) Effects of Virtual Reality and Music Therapy on Academic Stress Reduction Using a Mobile Application. *Lecture Notes in Networks and Systems*, 407 LNNS, pp. 45-59. [https://doi.org/10.1007/978-3-030-96147-3\\_4](https://doi.org/10.1007/978-3-030-96147-3_4)
- [26] Yin, J. (2022) Effect of Acceptance and Commitment Therapy Combined with Music Relaxation Therapy on the Self-Identity of College Students. *Journal of Healthcare Engineering* 2022, art. no. 8422903. <https://doi.org/10.1155/2022/8422903>
- [27] Y.-L. Huamán-Romani, E. Roque-Tito, L. Bautista-López and M. -D. Gutiérrez-Aguilar, (2021) "Level of Depression of College Students with Binary Logistic Regression Model Approximation in Covid-19 times" *IEEE 1st International Conference on Advanced Learning Technologies on Education & Research (ICALTER)*, 2021, pp. 1-4, <https://doi.org/10.1109/ICALTER54105.2021.9675127>
- [28] Devlin, K. (2022) Shaping the digital space: Exploring relationships in online music therapy session delivery. *Nordic Journal of Music Therapy*. <https://doi.org/10.1080/08098131.2022.2026453>
- [29] Tejada-Muñoz, S., Díaz-Manchay, R.J., Huyhua-Gutiérrez, S.C., Hinojosa Salazar, C.A., Vega Ramírez, A.S. (2022) Benefits of music therapy from the perspective of university nursing students. *Medicina Naturista*, 16 (1), pp. 21-26. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85124842740&partnerID=40&md5=52d35da908475162c6d33d09b91f33>
- [30] Wenqin, L. Analysis of the Effectiveness of Music Therapy on Mental Health of College Students (2022) *Journal of Healthcare Engineering*, 2022, art. no. 7288788. <https://doi.org/10.1155/2022/7288788>
- [31] Hernández, R., Fernández, C., & Baptista, M. P. (2014). *Metodología de la investigación*. McGraw Hill.
- [32] Ponce de Leon, L., & Del Olmo Barros, M. J. (2021). Diseño e implementación de un programa de musicoterapia de improvisación en un conservatorio de música. *Revista Electrónica Complutense de Investigación en Educación Musical - RECIEM*, 18, 217-250. <https://doi.org/10.5209/reciem.69085>

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