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# **Journal Education Sciences**

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## **Presentation of Content**

In the first article we present, *Anxiety and Academic Performance based on the school average, in Students of the Faculty of Psychology and Human Communication Therapy (FPYTCH) of the Juárez University of the State of Durango*, by FERNÁNDEZ-MOJICA, Leticia, SOTO-RIVERA, Jesús Abraham, SALAS-NAME, Sagrario Lizeth and CEJAS-LEYVA, Nohemí, with adscription in Universidad Juárez del Estado de Durango, as the netx article we present, *Educational games as a strategy for teaching and learning Accounting*, by HERNÁNDEZ-HERNÁNDEZ, María Elena, ARROYO-RUÍZ, Armando and AGUILAR-PÉREZ, Esmeralda, with adscription in Tecnológico Nacional de México, Campus San Martín Texmelucan, as the netx article we present, *The class of instrumental ensembles, music history and solfeggio from virtuality*, by MORALES-PÉREZ-TEJADA, Federico, RODRÍGUEZ-JUAN, Arién and OSA-RICARDO, Arlena, with adscription in Universidad Autónoma de Zacatecas and the Escuela elemental de música Alejandro García Caturla, Cuba, as the netx article we present, *The singing teacher. Comparison between the 20th century teacher and the corresponding evolution in the current 21st century*, by LIMA-SOLANYE, Caignet, CHAVEZ-ACUÑA, Samuel Caleb and BAUTISTA-ACOSTA, Edgar, Enoch, with adscription in Universidad Autónoma de Zacatecas.

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## Anxiety and Academic Performance based on the school average, in Students of the Faculty of Psychology and Human Communication Therapy (FPYTCH) of the Juárez University of the State of Durango

### Ansiedad y Rendimiento Académico con base al promedio escolar, en Estudiantes de la Facultad de Psicología y Terapia de la Comunicación Humana (FPYTCH) de la Universidad Juárez del Estado de Durango

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#### Resumen

En los estudiantes de nivel licenciatura, no es poco común escuchar que tienen algún síntoma de ansiedad, debido a la carga de trabajo que tienen. Objetivos: Identificar la presencia de ansiedad en los estudiantes de la FPYTCH, Indicar si se afecta el rendimiento académico respecto a la ansiedad en los estudiantes de la FPYTCH. Metodología: Esta investigación fue de tipo no experimental, exploratoria, observacional, por encuesta, de corte transversal y descriptiva, pues no se realizó maniobra experimental alguna, en una muestra no probabilística obtenida por accidente y por conveniencia, previa firma de consentimiento informado. Procedimiento: Participaron 104 estudiantes correspondientes a los semestres de 1º, 2º, 3º, 4º y 5º, a quienes se les aplicó el cuestionario de ansiedad de Beck. Para el procesamiento estadístico se empleó el software spss versión 20.0. Contribución: .906 CRONBACH. Los resultados obtenidos, muestran que 28.8 % de los estudiantes presentan ansiedad grave y un 13.5 % no tienen ansiedad, así como el promedio de calificación mínimo encontrado es de 6.9 y el máximo es de 9.7, sin embargo, dicho promedio de calificación no se encuentra influenciado por la presencia o no de la ansiedad.

**Ansiedad, Rendimiento Académico, Estudiantes universitarios**

#### Abstract

In undergraduate students, it is not uncommon to hear that they have symptoms of anxiety, due to the workload they have. Objectives: Identify the presence of anxiety in FPYTCH students, Indicate if academic performance is affected with respect to anxiety in FPYTCH students. Methodology: This research was non-experimental, exploratory, observational, by survey, cross-sectional and descriptive, since no experimental maneuver was performed, in a non-probabilistic sample obtained by accident and convenience, after signing the informed consent. Procedure: 104 students participated corresponding to the semesters of 1st, 2nd, 3rd, 4th and 5th, to who were administered the Beck anxiety questionnaire. For statistical processing, spss version 20.0 software was used. Contribution: .906 CRONBACH. The results obtained show that 28.8% of the students present severe anxiety and 13.5% do not have anxiety, as well as the minimum grade average found is 6.9 and the maximum is 9.7, however, said grade average is not found. influenced by the presence or not of anxiety.

**Anxiety, Academic Performance, University student**

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## Introduction

Studying for a university degree is a stage in the life of the individual, which implies that due to the age of the students at that time, they are consolidating their life projects, acquiring a greater number of responsibilities, such as, for example, some of them pay for their studies alone, become independent from their parents and therefore increase their commitments in all senses.

It is important to take into account what mental health is, which is defined by WHO (2018) as an integral and essential component of health. The WHO Constitution states, "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." An important implication of this definition is that it views mental health as more than the absence of mental disorders or disabilities. In recent years, anxiety has become one of the most frequently occurring psychological pathologies.

It can be said that anxiety is an emotion characterized by the feeling of fear, dread, depression, insecurity, as a consequence of the individual's feeling that his interests are threatened, that he has insufficient means, that he has difficulties in performing appropriate behaviors, that he is dissatisfied with the success he has achieved, or that he has problems in maintaining these achievements (Baeza, J., Balaguer, G., Belchi, I., Coronas, M. and Guillamón, N. 2008).

As indicated by Arco, López, Heilborn and Fernández (2005), cited by Martínez, V. (2014), entering the University, can entail significant changes in the daily activities of students (separation from the family nucleus, increased responsibilities, re-evaluation of the activities they perform). In itself, the university world presents organizational and academic characteristics and demands that sometimes lead the young person to adaptive reactions generating anxiety and considerable psychosocial disturbance with a decrease in performance.

It is worth noting that the academic load that the student takes every semester is considered a stressor that in turn can trigger anxiety (Toro, 2011. Cited in Trunce, Villarreal, Arntz, Muñoz and Werner, 2020).

## Justification

Currently, anxiety can be associated with multiple factors, on many occasions, it is because it is about complying with what society sets, the expectations that are placed on individuals or what is "expected of them" in terms of academics.

The present study will focus on identifying whether anxiety has an impact on academic performance based on the students' grade point average.

For the above mentioned, there is a need to identify if there is anxiety in students, as well as if it affects academic performance.

## Problem

In these times, talking about anxiety is quite common, suffering from it is something that society has had to deal with in recent years, since anxiety is present in children, adolescents and adults, regardless of age, socioeconomic level, or whether they are working students or without work or academic occupations.

Anxiety can affect the performance of individuals in various areas, but the particular interest for this study is the academic performance of students of the Faculty of Psychology and Human Communication Therapy. Therefore, the research question is: Does the presence of anxiety in the students of the Faculty of Psychology and Human Communication Therapy affect their academic performance?

## Hypothesis

**Hi:** The students of the faculty of psychology present low academic average in relation to anxiety.

**Ho:** The students of the faculty of psychology do not present low academic average in relation to anxiety.

## Objectives

### General Objective

- To identify the presence of anxiety in FPYtCH students.

**Specific Objective**

- To indicate whether academic performance is affected by anxiety in FPyTCH students.

**Theoretical Framework****Concept of Anxiety**

The term anxiety comes from the Latin *anxietas*, distress or affliction. It consists of a state of psychophysical discomfort characterized by a feeling of restlessness, uneasiness, insecurity or unease in the face of what is experienced as an imminent threat with an undefined cause. The basic difference between normal and pathological anxiety is that the latter is based on an unreal or distorted assessment of the threat (Virues, 2005).

Therefore, it can be said that anxiety is presented as a response to circumstances that the person feels as a threat, being able to present alterations of cognitive, behavioral or psychophysiological nature. Perez (2003) cited by Diaz and Castro (2020), defines anxiety as the adaptive response of an alarm system that prepares an organism to debate against a potential danger; under normal conditions, the symptoms of anxiety are imperceptible, but when it is intense the individual experiences a feeling of uneasiness and apprehension that is accompanied by increased vigilance of the environment, difficulty in concentrating, increased muscle tension and numerous symptoms.

In the DSM-V it is mentioned that anxiety can be classified into different types: social anxiety, selective mutism, generalized anxiety, medical condition anxiety disorder, separation anxiety, specific phobia, panic disorder, agoraphobia, substance or medication anxiety, these disorders have different criteria that classify them from each other as some disorders have similar characteristics such as anxiety and excessive fear (APA, 2014).

**Triple Response System of Anxiety**

According to Hernandez et al. (S/F), anxiety is not a symptomatologically unitary phenomenon, involving at least three components or response systems: subjective-cognitive (verbal-cognitive).

Internal experience of anxiety, subjective perception and evaluation of stimuli and anxiety-related states, characterized by experiences of fear, alarm, uneasiness, worries, intrusive thoughts.

Physiological-somatic. Mediated by activation of the autonomic nervous system and characterized by tremor, sweating, increased muscle tension, tachycardia, tachypnea, symptoms that are perceived as annoying and unpleasant.

Motor-behavioral. The behavior manifests escape and avoidance. The dissociation of the response systems will cause different response profiles, which will guide the individualized therapeutic choice.

**Concept of Academic Performance**

Himmel (2002), quoted by Bojorquez (2015), mentions that academic performance is defined as the degree of achievement of the objectives established in school programs. Academic performance, in this sense, constitutes an indicator of the level of learning achieved by the student, it represents the level of effectiveness in achieving the curricular objectives. For Tejedor (1998), most research aimed at determining success or failure in studies has reduced the concept of performance to academic certification (grades).

**Anxiety and Academic Performance**

One strand of the literature on anxiety and academic performance is based on Hanin's theoretical formulation of the optimal zone of individual functioning, which assumes an inverted U-shaped function relating performance and anxiety level on the ordinate and abscissa axes, respectively. According to this approach, for students to display successful academic behavior, they should exhibit average levels of anxiety that will serve them to take their studies seriously and apply themselves to them, but these levels should not exceed a certain range, since if this were to happen, students would be too overwhelmed to deal with the academic challenges they have to face, throughout their training (Hanin, 2003, cited by Bojorquez, 2015).

According to WHO (2019) cited in Rodriguez and Chaparro (2020), it is recurrent that the mental health of people is affected by anxiety being this a disorder with a usual problem index to interfere in people their performance at a high level so much that a large percentage in the world today presents anxiety disorder since several factors put the mental health of people at risk preventing a well-being for the being. In a study conducted by Serrano, Rojas and Ruggero (2013), it was found that there was almost no correlation between academic performance and anxiety, since anxiety did not figure as a cause or effect of academic performance.

In the case of anxiety, it is well known that when kept at balanced levels it can be beneficial, as it helps, for example, to face the challenges that arise in university life. However, if it is excessive it can have insidious effects on the student's trajectory, with a decrease in academic performance, deterioration of interpersonal relationships and health (Martínez, 2014). Therefore, it could be said that anxiety can also have an adaptive function to the environment in which the individual develops, but it is always necessary to be aware that the symptomatology does not worsen and make it impossible for the subject to carry out their daily activities, both in the personal, school, work and family spheres.

All individuals experience anxiety at some stage of their lives; it is characterized by a diffuse, unpleasant and vague feeling of apprehension, manifested by the inability to sit or stand for a period of time, and often accompanied by vegetative symptoms such as headache, diaphoresis, tachycardia, chest tightness, epigastric discomfort and restlessness. In a normal clinical condition, it is a warning signal that warns of impending danger and allows the individual to take measures to cope with such threat (Kaplan, Sandock and Sadock, 2009 cited by Cardona, et al, 2015). The anxious symptomatology that a young university student may present, according to the classic approach of the triple response system (Lang, 1968 cited in Martínez, 2014), can be noticed in the psychological (fear, apprehension, catastrophism, inattention), physiological (tachycardia, feeling of suffocation, tremor, hyperhidrosis) and behavioral (drug abuse, anger, absenteeism, desertion) levels.

The anxiety faced by university students during their academic training can constitute a serious problem, since the psychological discomfort is compounded by the difficulty in obtaining a good academic performance as their resilience capacity is exceeded, even putting their health at risk (Marty, 2005, cited by Castillo, et al. 2016). However, in a study conducted by Ocampo, Jimenez, Perez, Ramirez and Vega (2007), it was found that the empirical evidence of that work showed that the levels of depression and anxiety in young psychology students of the Facultad de Estudios Superiores Iztacala are not problematic, it is worth mentioning that even though the differences were not significant between depression and anxiety by gender, we believe that the sample size was an important variable since in other studies the sample is larger than 250 people.

### Methodology

This research was non-experimental, exploratory, observational, by survey, cross-sectional and descriptive, since no experimental maneuver was performed, in a non-probabilistic sample obtained by accident and by convenience, after signing an informed consent form.

### Procedure

A total of 104 students from the 1st, 2nd, 3rd, 4th and 5th semesters participated and were administered the Beck anxiety questionnaire. SPSS software version 20.0 was used for statistical processing. Contribution: .906 Cronbach.

### Results

Of the 104 students evaluated that made up the total sample of the universe, 87 participants were female and 17 were male, obtaining the following results:

	Students	%
No anxiety	14	13.5
Mild anxiety	31	29.8
Moderate anxiety	29	27.9
Severe anxiety	30	28.8
Total	104	100.0

**Table 1** Anxiety levels

Source: Own Elaboration

As shown in the table above, 28.8% of the students showed severe anxiety, which is significant, since only 13.5% of the respondents did not show any anxiety.

Table 2 shows that the lowest average obtained by the students is 6.9 and the highest average is 9.7, highlighting that only one student showed mild anxiety in both cases.

A relevant data in this study is that 30 students present severe anxiety one with an average of 7, one with 7.3, one with 7.7, three with 7.8, one with 7.9, two with 8, three with 8.1, one with 8.2, two with 8.4, one with 8.5, three with 8.6, two with 8.7, one with 8.8, one with 8.9, two with 9.1, three with 9.2, one with 9.4 and one with 9.5, 14 students do not present anxiety, finding one student with 7.2 grade point average, one with 7.5, one with 8, one with 8.1, one with 8.4, one with 8.6, two with 9.1, three with 9.2, two with 9.4 and one with 9.5.

Average	No anxiety	Mild anxiety	Moderate anxiety	Severe anxiety	Total
6.9	0	1	0	0	1
7.0	0	1	2	1	4
7.2	1	0	0	0	1
7.3	0	0	0	1	1
7.5	1	1	1	0	3
7.7	0	2	1	1	4
7.8	0	0	2	3	5
7.9	0	2	1	1	4
8.0	1	3	2	2	8
8.1	1	0	1	3	5
8.2	0	1	1	1	3
8.3	0	1	0	0	1
8.4	1	3	0	2	6
8.5	0	2	1	1	4
8.6	1	1	2	3	7
8.7	0	2	1	2	5
8.8	0	2	2	1	5
8.9	0	0	1	1	2
9.0	0	2	3	0	5
9.1	2	2	3	2	9
9.2	3	2	1	3	9
9.3	0	0	2	0	2
9.4	2	0	1	1	4
9.5	1	0	0	1	2
9.6	0	2	1	0	3
9.7	0	1	0	0	1
Total	14	31	29	30	104

**Table 2** Average rating  
Source: Own Elaboration

It should be noted that the minimum passing average is 6.0, according to the examination regulations of the School of Psychology and Human Communication Therapy.

## Analysis and Conclusions

It can be concluded that, according to the results obtained, anxiety is not a determining factor affecting academic performance in terms of school average; however, the data reveal that students present anxiety at different levels, from mild to severe.

Regarding the school average, the highest average presents mild anxiety and 18 of the students who also obtain an average considered as very good, present some level of anxiety, including 5 of them with severe anxiety, which confirms that anxiety in any of its levels is not a factor that affects academic performance in terms of school average, therefore, it is significant the number of students who present severe anxiety, and are considered with Panic Disorder according to the Beck Scale.

For the above mentioned in this study, the importance and necessity of implementing a social-emotional skills program for students with anxiety was detected, in which they are given the necessary tools to have a better ability to cope and manage anxiety, as well as the importance of channeling to the competent authorities, all those students who have a severe level of anxiety, so that they are properly treated and thus the anxiety does not generate a subsequent problem.

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## Educational games as a strategy for teaching and learning Accounting

### Juegos didácticos como estrategia para la enseñanza y aprendizaje de la Contabilidad

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#### Abstract

Throughout the history of education, tools or mechanisms have been used for student learning, which is why educational institutions have not only focused on increasing their use, but also on updating the way and means they use to teach. These institutions are also concerned with innovating and generating didactic tools, so that students can have the means of support that allow them to obtain new knowledge or reinforce those acquired in the classroom. In the present work, the design of a simulation kit or sets of support means is presented to carry out learning activities in an individual or group context, for the subject Introduction to Financial Accounting of the Public Accountant career of the National Technological Institute of Mexico, San Martín Texmelucan campus (ITSSMT). The methodology used was a non-experimental design, the variables in question were not manipulated, with a descriptive study to identify and design the content of the kit, a qualitative approach, having as object of study the needs of the students of the Public Accountant career ITSSMT, to which the survey for field research was applied.

Learning, Accounting, Games

#### Resumen

A lo largo de la historia de la educación se han utilizado herramientas o mecanismos para el aprendizaje de los estudiantes, por lo cual las instituciones educativas no solo se han enfocado en aumentar su uso, sino también en actualizar la forma y los medios que usan para enseñar. Estas instituciones también se preocupan por innovar y generar herramientas didácticas, para que los estudiantes, puedan contar con medios de apoyo que les permitan obtener nuevos conocimientos o bien reforzara los adquiridos en el aula. En el presente trabajo se presenta el diseño de un kit de simulación o conjuntos de medios de apoyo para realizar actividades de aprendizaje en un contexto individual o grupal, para la materia Introducción a la Contabilidad Financiera de la carrera de Contador Público del Tecnológico Nacional de México, campus San Martín Texmelucan (ITSSMT). La metodología usada fue un diseño no experimental, no se manipularon las variables en cuestión, con un estudio descriptivo para identificar y diseñar el contenido del kit, un enfoque cualitativo, teniendo como objeto de estudio las necesidades de los estudiantes de la carrera de Contador Público del ITSSMT, a los cuales se les aplico la encuesta para la investigación de campo.

Aprendizaje, Contabilidad, Juegos

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## Introduction

Currently the educational process is undergoing major changes, this means a real challenge for educational institutions that have to adapt to social, labor and cultural changes that involve innovative advances to be at the forefront in the teaching learning process, this situation is according to what UNESCO (2019) she considers that education is a human right for all, throughout life, and that access to instruction must be accompanied by quality, that is why it is intended to design a simulation kit of learning scenarios of the accounting discipline for the career of Public Accountant of the Tecnológico Nacional de México (TecNM), with this will support these trends that seek that students are involved and participate in the educational process, in a meaningful and collaborative way, and as it is well known the tools of education constitutes an extremely useful instrument in the planning, implementation and evaluation of learning systems.

It should be noted that Kit, according to the dictionary of the Royal Spanish Academy, is understood as "A set of products and utensils sufficient to achieve a certain purpose, which are marketed as a unit". In other words, it is a set of things that are used for a specific activity.

According to Mancilla (1999), simulation is understood as "the process of designing a model of a real system and conducting experiments with this model, with the purpose of understanding the behavior of the system and/or evaluating various strategies for the operation of the system".

On the other hand, Greco quotes Ruohomaki (2013) who defines that "a simulation is a functional representation of reality; it can be an abstract, simplified or accelerated model of a process. It pretends to have a relevant behavioral similarity with the original system".

In relation to what can be understood by Game Vigotski quoted by Baldeón (2021) describes this as "the realization of a fictitious situation extracted from reality with a certain structure that allows the transfer of a meaningful message to a student".

## Problem

Due to the fact that the subject of Introduction to Financial Accounting is taught in the first semester of the Public Accountant career, in some cases the new students already have previous knowledge of this discipline, since they studied it at the Baccalaureate or High School level, Unfortunately, this is not the case in most cases, so students who do not have this knowledge face difficulties in acquiring these contents, unfortunately, sometimes not all of them are able to solve the problem and they begin to show an attitude of apathy, disinterest, and lack of motivation, or sometimes it results in desertion. In this context, we emphasize the need to apply creative, practical and specific strategies for the subject of Introduction to Financial Accounting, with which all students can acquire the knowledge presented in the classroom or reinforce those previously acquired, thus supporting the work of the teacher, while allowing him to identify areas of opportunity of the student that require attention.

## Objective

The main objective is to present as a support strategy to the teaching-learning process, different didactic games to allow the students of the Public Accountant career of the ITSSMT, to acquire and strengthen the knowledge of the subject Introduction to Financial Accounting in an easy and dynamic way, in an informal environment.

## Methodology

The research design was non-experimental, since it was carried out without deliberately manipulating the study variables, the natural context of those involved in the case was respected, which were the students of the Public Accountant career who were studying or had taken the subject of Introduction to Financial Accounting, in this type of research there were no conditions or stimuli to which the subjects of the study were exposed. The study was descriptive, because it sought to identify the important characteristics and needs of the participants, which should be covered with the didactic strategy, due to the above, the research was also given a qualitative approach, because the aforementioned aspects were taken into account for the design and development of the didactic games.



On the other hand, the research was transversal, because the data collection was carried out in a single time.

The type of research used was field research, which consisted in the application of a survey to the students of the community of the Public Accounting Career, by means of a questionnaire where closed and multiple choice questions were used.

A Documentary Research was also used to know what has been done on the development of strategies in the field of accounting education.

### Market Study

It was necessary to carry out a research to know if there was a didactic support in the market, either commercial or free use, that would support the teaching of the contents of the subject Introduction to Financial Accounting, the findings are shown below:

- A great variety of virtual games were found, however, they were not adaptable to the contents of the Financial Accounting program.
- Some commercial software was found, but in most cases its functions were overloaded.
- Another unfavorable aspect of these commercial systems is that most of them have a high cost.
- Physically, no didactic games were found to support the teaching-learning process of the subject in question.

According to what was investigated, it was observed that there is no free or chargeable didactic support that addresses all the topics of the subject Introduction to Financial Accounting, for example the "DOUBLE HEADING SIMULATOR", helps the learning of this accounting technique, but does not support the learning of the rest of the topics of the subject; similarly, other simulators were found that help to review the accounting entries, but only that topic.

In conclusion, we did not find a didactic tool that met our needs, which is why we decided to develop them within the Research Department with members and students of the Research Academic Body of the Public Accountant career.

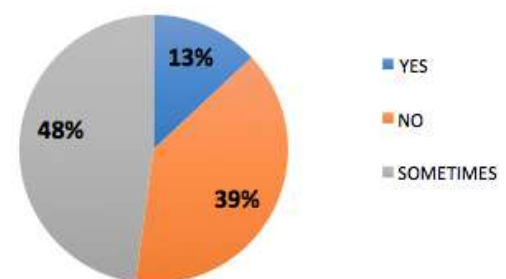
### Survey

In order to know the point of view of the students of the Public Accountant career of the ITSSMT about the didactic support proposed, as well as to determine the requirements that the didactic games should cover, a questionnaire was applied to 23 students. For the selection of the participants in the survey, two criteria were used: to be a current student of the Public Accountant career of the ITSSMT, that is, to be enrolled in the August - December 2020 school period, and to have taken the Introduction to Financial Accounting course.

The criteria applied for the selection of students with the intention of obtaining objective information were that they were enrolled at the time of applying the survey and that they had taken the course,

The sample was obtained from a population of 299 students enrolled in the Public Accountant career at ITSSMT, in the August-December 2020 school year, from the 1st, 3rd, 5th, 7th semesters and students of professional residencies, when applying a formula to obtain the sample it was small, therefore the number was increased to 23. The field technique based on a survey was applied, by means of a questionnaire, consisting of nine open and multiple-choice questions. The answers to the most representative questions are presented below.

Did you find it difficult to learn the contents of the subject Introduction to Accounting?



**Graph 1** Analysis of the question "Difficulty in learning the contents of the Introduction to Financial Accounting"  
Source: Own Elaboration

According to the opinions of the 23 respondents, 48% answered that, on some occasions it was difficult for them to learn the topics of the program Introduction to financial accounting.

Do you think it is necessary to have a didactic support to learn the contents of the subject Introduction to accounting?



**Graph 2** Analysis of the question "Need for a didactic support for the subject Introduction to financial accounting"

Source: Own Elaboration

Of the 23 respondents, 100% agree that they need a didactic support to facilitate the learning of the contents of the subject Introduction to accounting?

Do you know any didactic support to learn Accounting?



**Graph 3** Analysis of the question "knowledge of any didactic support to learn accounting"

Source: Own Elaboration

It is observed that none of the 23 respondents do not know a didactic support that helps them in the learning of accounting. At the moment of collecting and making the graphs of the information obtained from the questions asked, these showed 100% favorable results, which justify the importance for the students of the Accounting career to have a didactic tool for the subject of Introduction to Financial Accounting, such as didactic games that help them acquire the knowledge of this subject in a group and informal environment, that is to say, they can learn or reinforce knowledge by playing.

## Proposal

Didactic games proposed based on the syllabus of the subject Introduction to Financial Accounting, it is worth mentioning that the proposed games were selected from some already existing and known as board games, which were modified and adapted to the needs and characteristics of the students and the contents of the subject, which is why some of the rules to play were modified, as well as their physical presentation.

### – Game: Snakes and ladders

Topic 3. Double entry theory

#### Objectives:

- Review the theory of double entry,
- Acquire more knowledge about crediting and debiting.
- Record transactions based on the rules of debiting and crediting.

#### Specific competencies

Record the ordinary accounting operations of the economic entity in accordance with the double entry theory and apply the debit and credit rules to the accounting of the economic entity.

#### Instructions:

They were developed based on the rules of the game and others were added and modified according to the topic and the learning needs of the students.

#### Resources

Board, cards for each question, place cards, dice, sand timer, and a timer.



**Figure 2** Snakes and ladders game  
*Source: Own Elaboration*

– **Game: Memorama**

Topic 2: Basic Financial Statements

**Objectives:**

That the student reaffirms the difference that exists in each basic financial statement, as well as the elements that integrate it.

**Specific competencies**

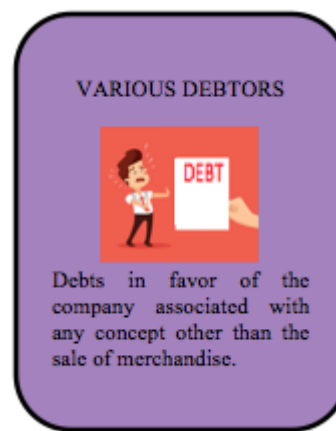
Elaboration of basic financial statements.

**Instructions:**

They were developed based on the rules of the game, others were added and modified according to the topic and the learning needs of the students.

**Resources**

Cards with the image and description according to each concept.



**Figure 3** Memorama game card  
*Source: Own Elaboration*

– **Game: Headbands**

Topic: All the topics of the program Introduction to Financial Accounting.

**Objectives:**

To achieve that students recognize and describe the basic concepts of the syllabus of the subject Introduction to Financial Accounting found in of each card by means of key words.

**Specific competencies:**

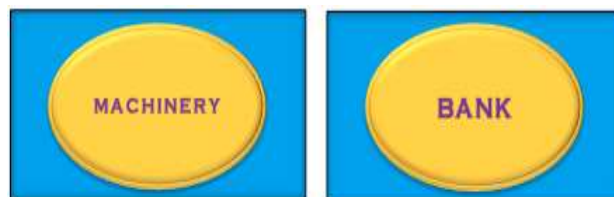
Apply the accounting process for the generation of financial information with adherence to Financial Reporting Standards.

**Instructions:**

Developed based on the rules of the game and others were added and modified according to the subject matter and the learning needs of the students.

**Resources:**

20 headbands, 80 cards with concepts, 90 tokens, 10 hourglasses.



**Figure 3** Headbands Game Cards  
*Source: Own Elaboration*

### – Game: Lottery

Topic: 2 Basic financial statements and 3 Double entry theory.

#### Objectives:

- Review the theory of double entry,
- Acquire more knowledge about crediting and debiting.
- To record transactions based on the debit and credit rules.
- Have the student reaffirm the difference that exists in each basic financial statement, as well as the elements that comprise it.

#### Specific competencies:

Preparation of basic financial statements.

#### Instructions:

Developed based on the rules of the game and others were added and modified according to the topic and the learning needs of the students.

#### Resources:

Boards and cards with the image and description according to each concept.



**Figure 4** Loteria Game Board

Source: Own Elaboration

### Contents of the didactic kit

The four games are part of a kit to support the teaching-learning process of the subject Introduction to Financial Accounting. For its correct use, it is divided into three modules, which are presented as follows

#### – Module 1

In this section you will find the theoretical content of the subject Introduction to Financial Accounting, so that students have the opportunity to consult it at any time.

#### – Module 2

Board games developed to review knowledge or to generate new knowledge, which will address specific topics of the subject program, each game will have the option to choose the number of participants, as well as the material such as cards, boards, tokens, rules and instructions.

#### – Module 3

This session will be designated for the teacher who acts as mediator in each game.

### Conclusions

Among the benefits provided by this didactic games kit, the following can be mentioned:

- Having a didactic tool that will allow reinforcing the students' knowledge.
- Accessible at any time.
- Support for teachers to identify areas and topics to improve in class.
- Due to all the characteristics and benefits of this didactic support, it has the option of scalability, with small changes and adaptations it can transcend to other areas of knowledge and even to other levels of education.
- It allows the development of learning spaces that are less rigid than the classroom.
- Learning will be done while playing.

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## The class of instrumental ensembles, music history and solfeggio from virtuality

### La clase de conjuntos instrumentales, de historia de la música y solfeo desde la virtualidad

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#### Abstract

Traditionally, music teaching has been developed in person, however, during the last years and after the appearance of the pandemic (COVID-19), it became necessary to adopt new models based on virtuality and thus continue with the teaching-learning process. This work aims to identify the most deficient aspects in the instructional design (ID) of the classes of Instrumental Ensembles and the theoretical ones of the music in conditions of virtuality in the Academic Unit of Arts of the Autonomous University of Zacatecas, Mexico. Essentially, a comparison was made in the development of the process and the academic results achieved by the students in each type of classes to determine which elements of the ID must be perfected for the continuity of the subjects from the virtuality.

#### Class of Instrumental Ensembles, Theoretical classes of music

#### Resumen

Tradicionalmente la enseñanza de la música se ha desarrollado de forma presencial, sin embargo, durante los últimos años y tras la aparición de la pandemia (COVID-19), se hizo necesario adoptar nuevos modelos basados en la virtualidad y de esta forma continuar con el proceso de enseñanza-aprendizaje. Este trabajo tiene por objetivo identificar los aspectos más deficitarios en el diseño instruccional (DI) de las clases de Conjuntos Instrumentales y las teóricas de la música en condiciones de virtualidad en la Unidad Académica de Artes de la Universidad Autónoma de Zacatecas, México. En lo esencial, se realizó una comparación en el desarrollo del proceso y los resultados académicos alcanzado por los estudiantes en cada tipo de clases para determinar qué elementos del DI deben perfeccionarse para la continuidad de las asignaturas desde la virtualidad.

#### Clase de Conjuntos Instrumentales, Clases teóricas de música

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## Introduction

The study of music, like music itself and musical experiences, entail a series of benefits in the personal, professional and academic that influence the evolution of man, according to García-Gil and Cuervo (2020) cited in (2021) Gimeno, musical practices have supported the overcoming of shyness, self-esteem difficulties and situations of social exclusion.

*... all the benefits that music generates, whether on a personal, academic or professional level, lead to a development of the individual, which favors his existence in the world around him, creating or sharing musical experiences, on a personal or interpersonal level, stimulating the emotional plane and consisting of a vocation or even a profession. (Gimeno, 2021, p. 18)*

The teaching of music in a professional way must have as goals the effective assessment of music and the taste of the public, therefore, the student needs to acquire a complete preparation during his academic development that allows him to interpret any type of musical proposal with quality.

Traditionally, music has been taught in person, where the actors of the process, the teacher and the student, are in the classroom; however, due to the COVID-19 pandemic, new models that Educational Technology (TE) has introduced, specifically e-learning, have been required to continue with music teaching and face the new challenges that the new social normal brings.

As expected, the Academic Unit of Arts of the Autonomous University of Zacatecas (UAAUAZ) also relied on technology and virtuality, as fundamental tools, to continue with the training of its students and not stop their academic progress; this led teachers to devise new teaching strategies to meet this challenge, even though not everyone was trained to do so.

## Development

The professional training of a musician requires the development of multiple knowledge and skills that combine to achieve an integral education, although the technique is fundamental for a correct instrumental execution (including the voice).

The practice is an indispensable pillar for this purpose, the correct interpretation of the extensive musical literature that exists, requires beyond the execution and the ability to decipher the score and understand its harmonic structures and contrapuntal, of a knowledge of the style in correspondence of the time and the composer framed in a historical context.

In this sense, in the academic and training process of the musician at the UAAUAZ, within the curricular map, the student needs to take the bachelor's level, but not before partially or totally studying in the institution the levels that precede the degree, or failing that, demonstrate, through an exam, that he has the knowledge and skills that correspond to the Basic and Upper Middle (MS) levels of music.

In the latter, subjects such as Solfeggio are included in the curriculum, which has been taught since the Basic level, and, in addition, those of History of Universal Music (HMU) and Instrumental Ensembles (IE) are integrated, the first two being considered as theoretical classes and the last as a practical class.

The Solfeggio class, despite being classified as a theoretical type, is a class that is developed in a theoretical-practical way and presents its bases in the knowledge and the practice of the teacher, which uses reproductive methods for instruction and that throughout history the lessons have been carried out in person. "Historically, the teaching of solfeggio is based on a 'teacher-learner' model that allows the student to obtain reliable feedback based on the experience and knowledge of the tutor." (Lasso, 2019, p. 4)

As already mentioned above, the Upper Middle level includes the History of Universal Music, in the same way, essential in the integral formation of the future professional musician, as stated in the description of the subject proposed by the National School of Music of the National Autonomous University of Mexico (ENMUNAM) (n.d.), represents a fundamental and indispensable part in the formation of a musician, which aims to provide the student with basic knowledge about the main stages of the development of Western musical culture, its currents, styles and most important musical forms, in this regard Morales (2012) tells:

*In general, the focus and raison to be of the History of Universal Music, within the Bachelor of Music programs is to study the music of man through its history, including information related to the most important facts, characters, dates and events of the various historical periods. (pages 321-322)*

The scope of the subject can be very broad considering that in addition to contributing to the musical culture and stylistic knowledge of the performers, it can promote and strengthen other skills, such as musical creation, research, communication and pedagogy.

*... depending on the way in which it is taught, it can provide tools for the enrichment and creation of new musical proposals and that the study of the history of music induces the student to reasoning, reflection and by equating their musical practice with the intellectual, in addition, through the subject the investigative and pedagogical spirit of the students can be fostered, develop their communicative skills and provide pedagogical tools for their future projection as a teacher of Music History. (Morales, 2012, p. 323)*

For its part, the class of Instrumental Ensembles is of a practical type, the subject is considered a space where what is learned in the other classes is used, individually, and is oriented to group work.

*The Instrumental Ensemble constitutes a space for training of the first order to experiment and apply, in addition to the skills acquired in the instrument class of the specialty, the knowledge acquired in all subjects. From this point of view, the set will also be able to travel the repertoire for different formations, of different eras or styles, which demonstrates once again that the Objectives of both subjects must be coordinated from a common perspective. (Instrumental Ensemble Programming, 2014, p. 1)*

For his part, the pedagogue Cano (2018), establishes the importance of the subject of Instrumental Ensembles, fundamentally in the motivation, in addition, that he exposes that the work that is carried out in terms of tuning, filling, compliance with rules and presenting the execution of works, framed in different genres and styles, appropriate to their technical level.

Among other functions, facilitate the student's performance when it comes to being part of a future of orchestras and musical groups, as well as to couple with their fellow musicians and conductors; another of the benefits that the author points out focuses on the social development of the entity.

*If we are able to achieve all this in these grassroots instrumental groups, we will be facilitating the work of future fellow musicians and conductors when these students access the titular bands of their associations, as well as enriching the musician in question both musically and socially. (Cano, 2018)*

In the months of March-April 2020, the UAAUAZ assumes the necessary measures to face the pandemic and continue with the teaching-learning process virtually; therefore, the teachers of the aforementioned subjects saw the need to make changes in their ID to adopt new teaching models based on the use of TE tools.

### **Educational Technology at the service of music education**

Technological progress has been notorious and has delved into most aspects of man's daily and social life, including education, which faces one of the most important changes of recent times, making timely use of the advantages offered by technology and thus favoring the academic development of students.

When conceptualizing About Educational Technology, we do not speak only of the inclusion of Information and Communication Technologies (ICT) within the class and as a support to instruction, "... the basic use of ICT by teachers is not a guarantee of competent professional practice" (Krumsvik, 2008; 2014, cited in Palau, Mogas, & Ucar, 2020, p.110), the authors agree with the pedagogues González and Flores (2020), who express that, a notion is made to a discipline that constitutes the progress of the media in combination with educational methods as tools for learning, which is mainly based on behaviorist theory.



New teaching and learning modalities have been created thanks to the TE, among which it is worth highlighting the online model, which, therefore, imposes the mastery of certain digital skills by the teacher, which benefit their work in the new normal, among which we can mention the communicative, technological, research and pedagogical. It is precisely e-learning that is the solution to the challenges posed by the health situation in the world.

Among the main difficulties identified worldwide in the professional teaching of music because of the pandemic, is virtualization, imposed by necessity overnight, without the implementation design that merited an educational transformation of this magnitude. "The massive virtualization of class teaching generated concern in society about a possible negative impact of "non-attendance" on the quality of education. Some careers seemed to be especially affected, such as those in the arts." (Piachonkina, 2020, p. 16). In addition, the author lists a series of aspects that must be taken into account so that the process of musical teaching is carried out with quality: it is necessary to discriminate the information that is going to be transmitted, in order not to saturate the apprentice with junk content; also, to establish well-stipulated class schedules, the terms and conditions of deliveries of well-defined tasks and that the system by which the evaluation is carried out is clear.

Despite the above, it is necessary to consider the adverse situations that may arise during the development of the course, "... we should not underestimate the problems of connectivity, the stress generated by the prolonged use of electronic devices, the overlap of the environments that traditionally used to be separated: the house and the educational institution." (Piachonkina, 2020, p. 19) The process of change to a virtual modality required a training proposal not only based on the knowledge of concepts and contents of the subject to be taught, but also of Educational Technology as a source of information transmission and manager of learning; with this premise, the realization of an Instructional Design focused on the e-learning model for the subjects of Solfeggio, History of Universal Music and Instrumental Ensembles is thought, which allows to systematically implement the activities that guarantee the appropriation of knowledge.

The ID is conceived as a way to guarantee an optimal level of teaching, when carrying out the analysis of the document, it is appreciated that authors such as González and Flores (2020) and De la Torre y Sosa (2018) refer to it as the planning prior to the instruction process, that is, the table work where the means and the form of use are planned and established, taking as its central axis the characteristics of the students; The above is presented under three fundamental premises: the recognition of the results of the teaching process, the introduction of the contents within it and the way in which the teaching-learning process is evaluated.

The model that was applied for the instructional design of the subjects already mentioned and that led to the adaptation of these to virtuality due to the health situation caused by COVID-19 was the ASSURE model (for its acronym in English: *Analyze learners, State objectives, Select media and materials, Utilize media and materials, Require learner participation and Evaluate and revise*), which, De la Torre and Sosa (2018) explain, is considered a model based on a conductivist, eclectic, constructivist and cognitive approach, which gives teachers the power to subordinate the planning, development, assessment and modification of learning environments to the needs of the apprentices in their charge. This model is applied in six moments ranging from the analysis of the students to the evaluation of the implemented course and the elements that integrate them.

As a starting point in the implementation of the DI ASSURE, the analysis of the students (A) is carried out, for which three fundamental aspects were established: the characteristics of the students, the knowledge of entry to the course and the learning style that predominates in each of the students.

Taking into account the result of the analysis of the learners, we proceed to establish the objectives of the course, the didactic units to work, as well as the lessons (S); subsequently the means, materials and resources that are going to be used (S) are raised, it must be taken into consideration that sometimes the tools required for instruction can be found, however, other times it is necessary to make adaptations or the creation of such resources for their implementation (U), this in order to promote the participation of students during the class (R).

Finally, the model proposes the evaluation of the course (E); to have data as close to reality as possible, it is advisable to make the assessment considering: the academic development of the students during the course, the implementation of the tools, elements, means and materials, as well as the performance of the teacher. The assessment made allows the corresponding adjustments to be made for the improvement of the ID and its future implementation.

### Methodology

The need to adopt a model that favored the continuity of the instruction process in the subjects of Solfeggio, History of Universal Music and Instrumental Ensembles of the Upper Middle level of the Bachelor of Music with emphasis on uauaz instrument, determined the combination of methods for the search for theoretical-practical references that would enable the adequacy of the ID.

In this case, methods such as documentary analysis, survey and pedagogical observation were used; the characteristics of the platform and the selected model led to the use of tools and resources that allowed to visualize the development of the competences established in the programs of the subjects, as well as the creative activity of the students, taking as a starting point the instructions of the teachers. For the research there was a sample of 19 students of Instrumental Ensembles, 32 students of History of Universal Music and 13 of Solfeggio who study the subjects in semesters I, III and V of the Upper Middle level of the Bachelor of Music with emphasis on instrument.

### Discussion of results

Despite the fact that more than a year has passed since the musical pedagogical process is carried out from virtuality, the work in the aforementioned subjects still presents adverse elements, which are sometimes alien to the will of the actors of the teaching-learning process such as: the unstable internet connection presented by students and teachers, health situations that directly affected one or the other, or failing that, family members, the socio-economic situation of the students, among others, which caused moments of tension and negative reactions towards the study on the part of the students.

In the feedback surveys carried out at the end of the courses in the subjects of HMU, Solfeggio and IE, the apprentices expressed feeling greater progress, in terms of academics, in the subjects of a theoretical type in relation to the practical subject, where even, respecting the measures established by the state and institutional authorities, during the last three weeks it was required to make effective some classes in person, as a result it was possible to observe a notable difference in its evolution in the three face-to-face classes compared to what has been worked so far in the semester through virtuality.

The documentary analysis showed that this perception did not occur only in the institution, but that, in the Autonomous University of Aguascalientes (UAA), belonging to the same region as UAAUAZ, the same feeling was presented regarding the musical pedagogical process in virtuality. "The most effective subjects have been those that are not practical, since it is easy to leave the written instructions and do the work that is commissioned (CE-12). Due to their theoretical nature, it is easier to adapt them to this modality (EC-21)". (Carbajal-Vaca, 2021, p. 22)

As for the DI ASSURE model, it is perceived that its implementation had its differences caused by the type of class in which it was developed. In the first phase, (A) the analysis of the students, was focused on establishing the characteristics of the same and presented points in common in all the subjects, however, when establishing the predominant learning style in the students, it was observed that: by its nature of practical type, in the class of Instrumental Sets it was assumed, on the part of the teachers, that kinesthetic learning predominated within the different groups, meanwhile, in the classes of Solfeggio and History of Universal Music facilitated the application of the VARK questionnaire, which exposed the mastery of different learning styles, predominating literacy and auditory styles, within the class groups.

(S) The objectives were established according to the competencies marked in the different work programs and were always subordinated to the characteristics of the students, again, assuming that the ES class is practical the objectives focused on the work of interpretation, assembly, filling and tuning.

In the development of the theoretical classes, the search for resources, materials and means to transmit knowledge (S) focused on the discrimination of information, the creation and modification of didactic and technological materials such as videos, audios, podcasts, documents in .pdf, digital presentations, materials for individual and collective work and the programming of courses in the educational platform (LMS-Moodle); for its part, in the class of Instrumental Ensembles during this stage was charged to the conformation of the musical groups in which the student would work depending on the instrument he studies and in the search for the music they were going to interpret, it is worth noting that phase 1 of the Instructional Design was taken into account.

In the next phase (U), the necessary resources, tools and materials were prepared; in the theoretical subjects, the courses were mounted on the LMS platform (for its acronym in English: *Learning Management System*) MOODLE, which supported the development of progress and activities during the semester and in the same way, served as a means of communication between teacher-student-group. On the other hand, at this stage little or no work was done in the ES classes, this because practically the only thing that was done was to establish the class schedules to work.

In the fifth moment of implementation of the ASSURE model, (R) once again the differences between the practical and theoretical classes are identified, the latter allowed the planning of both synchronous and asynchronous activities, thus facilitating self-taught learning.

Within the planning of the pedagogical activities designed to be applied in virtuality, it can be decisive to choose between the options of synchronous and asynchronous interaction, which are the ones that provide greater flexibility to the e-learning model, considering the affectations that occur after the drastic reduction suffered by the contact between the actors of the musical pedagogical process. "In this context, decisions made about synchronous or asynchronous interaction between teachers, students, and their families are of particular importance (Offir et al., 2008, cited in Palau, Mogas, & Ucar, 2020, p. 110).

In the subject of History of Universal Music, synchronous activities focused on interaction through weekly videoconferences, allowing dialogue and contrast of information previously obtained individually by students, where the participation of the teacher promoted discussion, analysis and consolidation of knowledge, other ways to favor constant interaction between students during the semester, generally asynchronous, were forums and teamwork.

It should be noted that research is an essential part of this subject as a strategy to promote the acquisition and development of self-taught skills, so necessary in virtuality, which also contributes to one of the objectives established by UNESCO (2010) in pursuit of the development of education and which dictates "stimulate the exchange between research and practice in the field of art education" (p.6).

Likewise, Piachonkina (2020) states that: "... it is hoped that this type of internship can contribute to awakening in students' curiosity and, in the long run, the natural interest in research as part of musical work." (p. 19)

Meanwhile, in the Solfeggio class, asynchronous activities were programmed, such as the delivery of tasks for the realization of documents and podcasts by the students, databases where the trainees captured videos interpreting melodies and tunes according to the objective of the unit, collaborative work was promoted through the execution of canons.

And the use of activities such as the workshop; the feedback survey of the course exposed that the students were very motivated with the activities of musical creation, they felt wrapped up thanks to the constant communication both by the messaging of the educational platform and by the synchronous activities that were organized such as videoconferences, which were channeled mainly to the resolution of doubts and the exercise of some specific exercise to reaffirm the information that was provided to them.

The work in the subject of Instrumental Ensembles was developed, mostly synchronously, through two weekly videoconferences in which each of the members of the different groups was reviewed, individually interpreting fragments of the assigned works, while the other companions listened or if possible played with them with their microphones off, share the pdf of the score on the screen and make annotations digitally, in addition to maintaining communication between the teacher and the members of the ensembles, the WhatsApp application was used; It is worth clarifying that asynchronous activities were scheduled where they were asked to make recordings and share them, by the same means used for communication, with their groupmates and with these to carry out the practice having a musical base on which to rely, however, due to different circumstances they could not always be brought to fruition.

The last step of the DI ASSURE model is the evaluation and review (E), this as it has already been established previously allows to perfect the course and improve those elements that are considered necessary, for its application in future semesters.

The first aspect in the evaluation is oriented to the academic performance of the students during the development of the semester. In the subject of Solfeggio, diagnoses were made gradually, the activities that had to be delivered weekly helped to assess the progression of each of the students, which allowed the teacher to see what were the skills that should be practiced and draw strategies for their work in videoconferences. At the end of the semester a knowledge and skills test were carried out that allowed a more general assessment of everything that had been learned during the course.

To establish the level of learning achieved in the subject of History of Universal Music, the quality and depth with which information was provided was considered and replicated in each of the forums aimed at sharing the researched knowledge, both individual and group tasks and works and oral and written participations in the videoconferences that also served as an attendance pass to them.

As for the academic performance of students in the subjects of Solfeggio and History of Universal Music, a significant advance was seen with respect to the diagnosis made at the beginning of the semester in the first phase of the DI, work must continue in terms of responsibility towards the fulfillment of the deadlines for delivery of activities, which affected some students in terms of the grade obtained in the semester.

The evaluation of the course and the performance of the teachers in the theoretical subjects by the students was carried out through a feedback survey carried out anonymously and at the end of the course, the results of the same show that:

The LMS-Moodle platform was very friendly, the exercises and asynchronous activities served to practice the knowledge acquired, one of the problems, which they constantly expressed, was the unstable connection to the internet and not being able to participate constantly in the videoconferences for work reasons, family matters, splices of schedules, mainly when the teachers of other subjects cited them at the same time as the theoretical music classes, or for health situations, however, they expressed that the teachers of the classes provided opportunities for the realization of activities, the strategies drawn up for these classes together with the option of being able to visualize the recordings of the video classes made were outstanding elements.

Also, the students expressed that, at all times, the communication, between student-teacher-group, was effective, which made them feel sheltered and cared for; the means of communication, such as forums, chats and group and individual messaging, where communication was synchronous and asynchronous, were judged as appropriate, in addition, it is observed that the appreciation of the students is favorable in that the communication was complemented by the synchronous activity of the videoconferences; finally, the way in which they shared information and discussed it was adequate and effective.

As a final activity in the semester of the subject of Instrumental Ensembles, it was established the delivery of a video that previously had to upload to YouTube and share the link with the teacher; the video would include both the audio they recorded together, or that they edited recording separately, as well as information about the composer and the work. In addition, they were also asked to make a self-criticism of the shared video in relation to 1. Good aspects, 2. Bad aspects and 3. Difficulties.

In turn, the same feedback survey showed that in terms of the development of the semester there were diverse opinions, where it is denoted who had the opportunity to work some classes in person, it must be considered that there were groups that did not receive classes under this model and that the work was carried out completely through virtuality.

However, there is a general opinion, among the students, channeled to how slow this subject is worked in the e-learning modality, as a cause of this deficiencies are established such as: the gap between audio and video in synchronous activities (videoconferences), the little responsibility on the part of the students when delivering audios and videos to be able to carry out practices, the poor attitude to study, the unstable internet connections by which it was sometimes impossible to work with the teacher.

Opinion of student who did not have any face-to-face class in the semester:

*As has happened in recent semesters the class had to be taken online which because this subject is worked in a group made it difficult to develop the work but using the editing tools and the guidance of the teacher could reach a result as close as possible to if we had played together live. As for the bad aspects I think it was mainly having to work the subject online since many times personally this does not allow me to understand how the work should sound in terms of what is related to the expression, but despite having those difficulties there were also good things such as the orientation of the teacher which was of great help to understand and have a clearer idea of how it should sound, plus it's an opportunity to get to know new music.*

*Already in general I think that taking into account the situation worked well and reached a result which although it was not excellent was acceptable. We can only thank the teacher for his support and willingness so that we could have the best results, as well as my colleague who in the same way always showed willingness so that we could get a good product.*

Opinion of student of instrumental ensembles who had two face-to-face classes at the end of the semester:

*Good day, in the elaboration of this work we find several issues. mentioning good aspects are that I was happy to be able to live together again after so long, returning to the classrooms and playing together, with classmates and teachers, the work was different compared to online classes. Among the bad aspects are that I was stressed when studying, or at the time of recording, I was nervous when playing, but we still managed to get good recordings. In the difficulties it is found that sometimes we play well, but then because of the nerves we could not enter together, in time. and to finish regarding the development of the semester I think it was good, we did well during the classes, and I also appreciate the patience of the teacher, or that sometimes despite how we were, always at the end of the class encourages or motivates us to continue moving forward.*

It is necessary to comment that the generalized opinion of the students, expressed through the surveys, as well as what could be observed, is distinguished that technology and its tools do not present the same use for theoretical classes as for practices in musical pedagogy, which is not an exclusive idea of the students and teachers of the UAAUAZ, but the documentary analysis revealed the same thought in several articles. In interviews conducted by Carbajal-Vaca (2021), learners express a similar feeling.

*In addition to the general perception, the answers show that the technological resources available do not have the same functionality for all subjects... There are certain difficulties in carrying out a class as practical and ensemble as chamber music (CP-1). It is a bit difficult to work remotely, especially on the instrument and chamber music, since not all the technical aspects can be worked on (CP-5).*

*My experience as a teacher in this situation has been difficult for me, the instrument class is face-to-face, therefore, too much information and time is lost when it is done through video-call, in addition to the fact that the audio is not the same as live (CP-16). (p. 19).*

### Conclusions

The new normal, caused by the COVID-19 pandemic, leads to the adoption in education of the educational models introduced by the TE, which favor remote work in subjects such as Solfeggio, the History of Universal Music and Instrumental Ensembles, which were traditionally developed in person.

The characteristics of the adopted instructional design, ASSURE model, facilitated the work in theoretical subjects such as Solfeggio and the History of Universal Music, making possible the continuity of the teaching process and the active and creative participation of the students, this despite the difficulties that arose during the course.

On the other hand, the development of practical subjects, such as Instrumental Ensembles, were less benefited by the change to a virtual modality; the difference between the work is very noticeable, in terms of the development of the instructional design, when comparing the subjects of one type and another.

Those who subscribe have come to the conclusion that the differences, referred to above, are mainly due to the predisposition to carry out a practical subject in person and although the shortcomings that arise are recognized, on the part of the technology in terms of audio, details that do not become perceptible through technological devices and connection problems, creativity in the strategies that are drawn up by teachers can improve the teaching-learning process and increase motivation towards study.

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## **The singing teacher. Comparison between the 20th century teacher and the corresponding evolution in the current 21st century**

### **El docente de canto. Comparativa entre el maestro del siglo XX y la evolución correspondiente en el actual siglo XXI**

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#### **Abstract**

The figure of the institutional singing teacher is one of the most complex and undefined within the lyrical academic scene. The complexity of the instrument is already enough to make the task of the difficult master, since it is an impalpable and invisible instrument but with a special delicacy and treatment. The singing teacher from past times has worked with a fixed methodology that has given determined results. Today the contemporary teacher works differently, with the use of technology and the use of ICTs. Both figures have cultivated the emotional and psychological development of their students regarding Singing. In this research, the teaching figure was analyzed in an integral way, having as objectives the analysis of its evolution from the institutional and private perspective, the comparison between the fundamental differences of both figures and the continuous contribution and research of academic-artistic fields for the Singing area in general. It was found, through a comparative table, that the teacher of the so-called "old school" handled other concepts suitable for their social context but that they have several essential quality elements for the correct learning of the vocal technique, as well as the best phoniatic knowledge and physique that many contemporary teachers expose in the classroom.

**Teachers, Singing, lyrical, Comparative, 20th and 21st century**

#### **Resumen**

La figura del docente de Canto institucional es una de las más complejas e indefinidas dentro del panorama académico lírico. La complejidad del instrumento ya es suficiente para hacer la tarea del maestro de difícil envergadura, pues es un instrumento impalpable e invisible pero de una delicadeza y tratamiento especial. El maestro de Canto desde tiempos pasados ha trabajado con una metodología fija que ha dado resultados determinados. En la actualidad el docente contemporáneo trabaja de manera diferente, con el uso de la tecnología y utilización de TICs. Ambas figuras han cultivado el desarrollo emocional y psicológico de sus estudiantes con respecto al Canto. En esta investigación se analizó de manera integral la figura docente teniendo como objetivos el análisis de la evolución del mismo desde la perspectiva institucional y privada, la comparativa entre las diferencias fundamentales de ambas figuras y la continua aportación e investigación de rubros académicos-artísticos para el área del Canto en general. Se encontró, a través de una tabla comparativa que el docente de la llamada "vieja escuela" manejaba otros conceptos adecuados para su contexto social pero que tiene varios elementos de calidad indispensables para el correcto aprendizaje de la técnica vocal, así como el mejor conocimiento foniatrico y físico que exponen muchos docentes contemporáneos en el salón de clases.

**Docentes, Canto, Lírico, Comparativa, siglo XX y XXI**

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**Objectives**

- To analyze the evolution of the figure of the singing teacher from the institutional and private perspective.
- To make the comparative between the fundamental differences between the teacher of the XX century and the teacher of the XXI century.
- To contribute to the continuous investigation of academic-artistic items for the area of Singing as an academic element.

**Methodology**

The following research uses a qualitative methodology of documentary cut through the comparison between texts and interviews on the teaching function of singing in the 20th century and in the 21st century. This topic involves somewhat subjective aspects that need to be reinforced through these documentary compendiums. A table was made to show the main elements that frame the differences, as well as direct quotations from the opinion of some very well known singers in the lyric field.

**Contribution**

Contribution to the continuous investigation of academic-artistic items as an academic element.

**Introduction**

The music student decides from the beginning the instrument in which he will specialize for his study. There are two scenarios within the study of music as a profession, that of so-called “long” careers and that of “short” careers. Long careers are called this way because the earliest age is required to begin the study of the instrument and it is around seven years of age. The instruments that are inside these are generally the piano, the violin and the cello. The age to start a short career is usually from ten years to twelve years of age for wind instruments such as the trumpet or percussion.

Singers are the musicians who begin to study later in life. The training begins by attending the different instances that offer this preparation. One of these is the so-called music school or music unit.

These schools are often part of a university or university system. The other way to join the singing learning is privately, through private teachers, coaches or voice specialists.

To start studying singing in an Institution, in general, the minimum age required is eighteen years old. This is because the physiological structures of the phonatory apparatus are not ready before this age, especially for male students whose larynx undergoes a more delicate and aggressive change process during puberty and adolescence with the so-called: voice change . The larynx has a maturation time that influences the health and vocal qualities. Ossification of certain cartilage can take a long time, even beyond twenty-two or twenty-three years of age. The progress of a singer can be slow and complex. Many years of study are required to develop the much desired correct muscular coordination and a complex balance between mind and body, necessary to be able to tackle the great challenge of mastering a vocal technique.

Time and patience are some of the qualities that a singer must show to achieve her goal. Mastering a vocal instrument is an art that occurs within a narrow gap between theory and practice through emotional and neural connections integrated into corporeality. "... technical control is essential, not only to manage the roles but to balance the anxiety of the artists to abandon themselves to the music during the performances" (Popp, 1993))

Hand in hand with physical, psychological and emotional growth, there is usually a trained teacher who guides the new student through the complex world of Singing.

But the figure of the teacher and facilitator has shown an evolution, accompanied by technological-digital development but that on the other hand, has diminished in how much some aspects that have to do with the environment and current demands for singers and therefore for the new graduate of the Institutions.

In this research, the differences in teaching between the singing teacher of the last century and the current teacher were considered, through an exploratory procedure.

## Developing

Despite the scarce job outlook that exists for this career: Bachelor of Singing is one of the most difficult and demanding careers of modernity. The teacher is faced with an invisible and untouchable instrument, since what is really perceived is a sound that is emitted by the passage of air between two vocal cords. Many singers even claim that they have learned in a self-taught way:

"I taught myself to sing" is what you occasionally hear from a professional singer. This statement should not surprise anyone, because all singers should be their own teachers. Learning to sing involves unification of the musical ear, body control and creative intelligence, an act of artistic integration that cannot be superimposed on the singer from the outside. In this sense, no teacher teaches a singer to sing. The singer must have confidence in the teacher's ear and in the technical school that he presents, but none of these positive factors is enough. The teacher's job should be to point the way (an essential service). "(Miller, 1986)

The singing teacher has always accompanied the student and in the past he was an essential and interchangeable figure. Since the voice is an instrument that evokes a lot of mystery and first-rate auditory qualities, the individuality of the student must be carefully reviewed by the teacher. For this reason, methodological reflections go in the direction of personalized teaching.

Currently, we are heirs to the romantic vocal technique, whose main characteristics are the coverage of high-pitched sounds and the use of the full voice throughout the register. This "new" way of singing is the invention of the French tenor Gilbert Duprez, who in 1831 almost completely replaced the *bel canto* technique and has remained the correct singing technique to this day.

The singing teacher must master certain skills and cultivate various very specific competencies to efficiently carry out the arduous task of forming a young voice. In this regard, the American singer and vocal educator Richard Miller (2004) thinks:

There are certain questions that must be asked to recognize the quality of a teacher: is the technique consistent with the function of freedom and the laws of vocal acoustics? Are the objectives of the vocalization patterns clear? Does the teacher use an understandable and adequate language, avoiding the pseudoscientific and the mythological? He listens if technique and performance are balanced, and determines if the lesson produces recognizable results. Is there a sense of honesty, lack of pomposity, absence of cloying solicitude, avoids omnipotent behaviors? Does he know the needs of the students? And above all, is the lesson around the student or around the teacher? (Miller, 2004, p. 218).

But this teaching function is also demanding, especially for those who work within a public or private institution, which are the two types of education offered in the academic field, since the general and particular intention is to be able to achieve the highest percentage possible high, the demands of an exit profile.

## Institutions are supported by study plans and graduation profiles

The graduation profile is a reference that defines the educational purpose of each career, which is why it becomes a key to the creation and strengthening of the study plan. With the graduation profile, each career guides its educational processes to delineate a curricular trajectory and generate an articulation of the different components of the Major Curriculum. (Universidad Mayor, 2019) It is not easy at all to develop a graduation profile relevant to social reality and that is where some Institutions give in to analysis and the continuous search to elaborate it. The graduate profile of the Bachelor's Degree in Singing from the Arts Unit of the Autonomous University of Zacatecas (UAA-UAZ) is as follows:

The graduate will be a professional with a solid comprehensive education that allows him to reach high degrees of flexibility, versatility, autonomy, creativity and critical sense. In addition, you will develop a deep level of awareness about your career development possibilities, extensive knowledge about music, and a high level of technical skills and knowledge in your area of emphasis: education, theory, and composition and performance.

The Bachelor of Singing will possess a set of values, knowledge and skills related to the specific knowledge of the musical discipline in its theoretical and practical aspects and a set of skills and abilities specific to the practice of the profession within a framework of self-development skills and values, and an emphasis on musical performance, education, theory, and composition.

As a first statement we find that the graduate must have a solid comprehensive education and a broad knowledge of theoretical and practical aspects. In the sense of the Canto student, integrality also has to do with being a complete, solid, autonomous, creative musician. One of the peculiarities of Canto students is that they begin at an advanced age, eighteen years old, which implies for the Institution to combine groups with instrumentalists who have already been studying first-order theoretical subjects, such as music theory for years. This particularity is interesting, because it can generate various negative or positive reactions in the new singing student, who only has four years to comply with this part of the graduation profile.

This element is of utmost importance to advance within the Singing class, the individual class of the instrument, since a singer who does not read music, who does not know the musical language and who cannot master it through the race, triggers doubly exhausting activities and generally unsuccessful for the singing teacher.

The other statement refers to in-depth knowledge of the possibilities of professional development. The figure of the professional counselor as the first contact with the social and labor reality within the career, can be considered essential. The contributions offered by professional guidance can be various, according to Polanco (2013):

1) Because it provides essential information to students about the variety of professional options that exist in the current music job market, and about the specific functions that are required for each case; 2) because it provides advice on decision-making throughout the training itinerary; and 3) because it contributes to the success of the educational process (Polanco, 2013, para. 2).

Tutoring is practiced both at UAA-UAZ and at various institutions where Singing is offered as a bachelor's degree, a program that still has a lot to offer and could combine what is related to professional guidance. At the end of the 19th century, the concept of the singing teacher was reduced, it was simplified. According to Felipe Pedrell, a singing teacher is one who "teaches the rules or exercises of emission, vocalization, etc., and in general the art of singing" (Pedrell, 1894, p. 267). So the choice of a good singing teacher was crucial to the success or failure of the singer's future artistic career. The talent was not enough to face a career as a singer, but the selection of the ideal teacher who can transmit the knowledge and the correct technical bases for the correct vocal emission.

The main duties of a singing teacher are: "to form the voice of the disciple, making the intonations fair and in such a way that he acquires an equal degree of flexibility in the forts and pianos, so necessary for intonation and to the extent that is due give each sound. Accustom the disciple to read the music at sight; try to make him pronounce and declaim with clarity and correction and, finally, instill in him the true and natural expression. It is also necessary for a singing teacher to know the practical part of harmony to accompany" (Fargas y Soler, 1853: 119-120). Here he refers to the importance of the singing teacher as an integral teacher, in the past.

There were all kinds of opinions regarding the qualities that a good singing teacher should possess. One of the great debates that existed and that is still maintained in the so-called Modernity revolves around the requirement that the singing teacher must or should not be an exalted and recognized singer. The contrary theory has been defended, which explains that a good singer is not necessarily a good teacher. According to Cerone, a good teacher, in addition to offering an adequate teaching methodology, should have three qualities: wisdom, experience and patience when teaching and he affirmed with a certain humor that "because he is funny in singing, because he has a good voice, because he is the brother of Chapel Master, because he was a good scribe, a good Grammarian, a good Rhetoric, deprived of the Bishop, a friend of the Count, Marquis or Duke, or because of other qualities in this way, the condition of a good teacher was not obtained" (Cerone, 1613).

Teaching through imitation has been somewhat redundant in singing culture. Even today this type of teaching has persisted in institutional classrooms and Conservatories in much of the world. Bacilly used to say: "A good teacher must first of all know how to sing and then have enough voice to make himself heard, because you cannot learn singing from books" (1668).

Generally, young students choose a singer who is usually active in the profession as their singing teacher. According to Alessandrini (2014), when a correction is carried out in the singing learning process, the student makes modifications of her physical and psychic schemes. Through these, the singer develops various capacities that bring him closer to understanding and controlling the vocal instrument.

But as Miller explained, the teacher cannot base his teaching on sensations, since these can be very subjective and lacking theoretical and physical foundation. Vitale (2008) states that the internal sensations of one's own body are inextricably linked with unconscious images that are constructed to represent sensory experiences in an abstract way. But somehow there has been a decline in the vocal level in the course of the century, so it is assumed that the much more rigid, disciplined and personalized teaching of the teachers of yesteryear generated higher quality results.

Despite the fact that images can be constructed based on the sensory, it is necessary to fully understand the phonatory apparatus in order to determine the physiological functions of the body. Here is another one of the differences between the teachers of the Canto of the last century and the present one. With technological development, current teachers have access to a large amount of information, videos and support material to teach their classes visually and efficiently. But it does not hold, according to observational experience, that this knowledge and the digitization of teaching have really generated better teachers than in the past century. Singer training is an athletic, muscular and emotional process that becomes a hard work together and that must be thoroughly reviewed.

For the musician, that is, also for the singer, the possibilities of the acoustic analyzer, the sensations of movement, the special motor skills (strength, agility in certain movement processes, coordination of various functions) and the memory performance, eg ability to remember, optical imagination ability (acoustic, motor, emotional). " (Seidner, Wolfran, Jürgen, 1982).

Some coinciding elements in the search for vocal technique by both teaching figures are the following:

- Aperto ma coperto (Open but covered) This sound produced that gives us the sensation of opening our throat without losing coverage and the color that it gives to the voice so that it resonates and vibrates throughout our mask (face).
- Voce in maschera (Voice in mask) Main resonance zone.
- Sulfiate (On air) The basis of a good song. Understanding this concept is simple, applying it takes a lot of practice. The secret is to keep the ribs open without pushing the air with the abdomen to produce free sounds, especially the treble ones.
- Passagio (Passage) Homogenization of the registers, achieving the same color and intensity throughout the vowel scale.
- Legato (Ligado) This term in singing is used to achieve the linked voice, the passage from note to note without losing the line.

The way in which these elements are worked has been determined by the specific search for methodological objectives in the classroom.

## Results

The result of the comparison between both teachers gives us the following:

Song Master	Twentieth Century	XXI Century
Personal vocal skills	It was essential	It is not so essential
Rigidity and discipline	It was essential	Teaching is more constructivist
Teacher with a comprehensive education	It was essential. The need to have been a great exponent of singing is accentuated.	Is essential
Academic loyalty	He was essential	More openness
Methodological challenges	The teacher is fully responsible for the vocal and artistic quality of the student.	The teacher can work with a support team for the student's development.

**Table 1**

The options and opinions on education vary between some recognized singers of the representative of both centuries. Those of the 20th century preferred and entrusted their vocal and emotional training to a single teacher, while contemporaries decided to use the range of available options as shown in the following comments:

### Singers of the Twentieth Century

... Today there are many people, including pianists, who establish themselves as singing teachers without having the necessary experience. I was lucky to find one who understood my voice and my personality and prepared me properly. With her I learned all my roles and songs ... (Matheopoulos, 1993, p. 241) "Berganza's teacher was very concerned about teaching him that the voice should have a single sound, although depending on what one interprets, it can have millions of shades and colors and dynamism ..." (Matheopoulos, 1993, p. 241)

"... She began taking singing lessons with Harry Gottschalk who continued to be her mentor and the only singing teacher she has had in her long career." (Matheopoulos, 1987, p. 273)

### Singers of the 21st Century

"Since my school days, I have had fantastic friends and mentors, including Master Gergiev. I also had the pleasure of working with so many incredible conductors, singers, conductors and coaches who inspired me to be better. Of course, my wonderful family has supported every step of the way. "(Muñoz, 2018)

"The reality is that I had a great diversity of teachers. All of them, each in their own way, helped me in my development. Each one opened up new possibilities for me, whether in coloratura, belcanto, Mozart, verismo or Verdi. I think I have been fortunate to have been able to receive so many diverse sources of learning and influences. I think having a single teacher could lead to a closed mind and, in the end, monotony. "(Romero, 2020)

### Conclusions

Due to the vast knowledge that the vocal instrument implies, the figure of the teacher has become more complex. The concept of singing teacher appears in continuous evolution. At the beginning of the 19th century, as an eighteenth-century heritage, the singing teacher was a musician with a comprehensive training in music theory, music theory, harmony, composition, instrumental and vocal practice, but many times he was an exalted and talented singer who was recognized and recognized. I had great respect and esteem for him. However, at the end of the 20th century and the beginning of the 21st, a specialization of the singing teacher took place that will continue to this day, exclusively in charge of providing their students with the vocal and interpretive technique necessary to be able to face a repertoire of a certain level, looking for adequate muscular coordination within their classes, often relying on a Coach or repertoire pianist who helps the student to assemble their repertoire and other elements included in the programs such as acting teachers, languages and accompanying pianists. The singing teacher of the 21st century works within a team of several teachers who jointly develop the student's abilities as a future professional singer. Their mission is basically to guide the process of successful technical mastery.

The titanic task of the teacher of the last century is recognized, who had to his credit the total responsibility of the formation of the young singer, so it was evident that he had to resort to imitation in order to transmit complete knowledge due to the responsibility granted. The singing teacher in the present century can be supported not only by technological tools but by a work team that involves other equally important figures in the formation of the current singer.

Both teachers could find themselves inserted in the Institution, so their teaching was permeated by the institutional characteristics. The rigidity and discipline of the teachers of the last century determined the realization of their profession with a high level, since the much more personal and reliable treatment determines a technical level and deeper understanding in the student.

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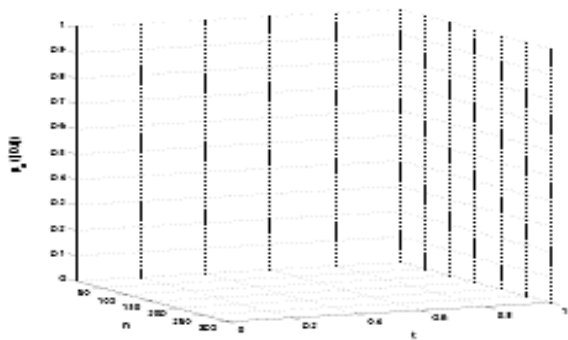
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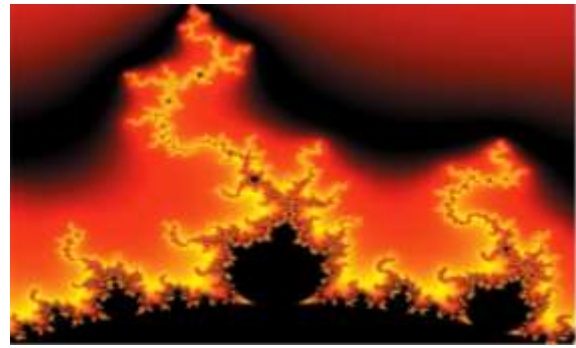
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