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Journal of Critical Pedagogy

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Content Presentation

In the first article we present, *Intervention strategy for children victims of bullying and school violence* by ALFÉREZ-HERNÁNDEZ, Silvia Rosa, CEJAS-LEYVA, Luz María, BERUMEN RUVALCABA, Reyna Angelica and FERNÁNDEZ-MOJICA, Leticia, with adscription at the Universidad Juárez del Estado de Durango, as a second article we present, *The flipped classroom as a tool for learning at High School* by FLORES-GONZÁLEZ, Efigenia & FLORES-GONZÁLEZ, Norma, with adscription at the Benemérita Universidad Autónoma de Puebla, as third article we present, *Teacher evaluation is myth or reality for teaching innovation* by SALINAS-AGUIRRE, María del Consuelo, HERNÁNDEZ-CUETO, Jaquelina Lizet and CHARLES-MEZA, Ángel Gerardo, with adscription at the Universidad Autónoma de Coahuila, as the last article we present, *Evaluation of the level of risk due to alcohol consumption and associated factors, in first-entry students at a University Campus in Jalisco, Mexico* by NÚÑEZ-HERNÁNDEZ, Alfonsina, GÓMEZ-CRUZ, Zoila, CAMPOS-BRAVO, Carlos Alberto and VALLEJO-GÓMEZ, Julián, with adscription at the Universidad de Guadalajara.

Content

Article	Page
Intervention strategy for children victims of bullying and school violence ALFÉREZ-HERNÁNDEZ, Silvia Rosa, CEJAS-LEYVA, Luz María, BERUMEN RUVALCABA, Reyna Angelica and FERNÁNDEZ-MOJICA, Leticia <i>Universidad Juárez del Estado de Durango</i>	1-9
The flipped classroom as a tool for learning at High School FLORES-GONZÁLEZ, Efigenia & FLORES-GONZÁLEZ, Norma <i>Benemérita Universidad Autónoma de Puebla</i>	10-18
Teacher evaluation is myth or reality for teaching innovation SALINAS-AGUIRRE, María del Consuelo, HERNÁNDEZ-CUETO, Jaquelina Lizet and CHARLES-MEZA, Ángel Gerardo <i>Universidad Autónoma de Coahuila</i>	19-22
Evaluation of the level of risk due to alcohol consumption and associated factors, in first-entry students at a university campus in Jalisco, Mexico NÚÑEZ-HERNÁNDEZ, Alfonsina, GÓMEZ-CRUZ, Zoila, CAMPOS-BRAVO, Carlos Alberto and VALLEJO-GÓMEZ, Julián <i>Universidad de Guadalajara</i>	23-30

Intervention strategy for children victims of bullying and school violence

Estrategia de intervención en niños víctimas de acoso y violencia escolar

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Abstract

The present work "Intervention strategy in children victims of bullying and school violence", was designed to evaluate and intervene, based on the scales of psychological damage found, with cognitive behavioral therapy techniques, exposure therapy, cognitive processing, physical care, self-knowledge, self-acceptance and learning to see memories as a tool. Objective: To develop and apply an intervention strategy in children victims of violence and bullying. Methodology: This research was experimental and mixed, combining qualitative and quantitative approaches. Both approaches were used in this work because when evaluating the children with the AVE test it was done by means of percentiles, when describing the concepts of the scales it was done in a qualitative way, as well as when registering the progress of the patients in the Anecdotal Record. The program provides a series of techniques for dealing with bullying and school violence.

School violence, Victims, Negative self-image, Flashbacks

Resumen

El presente trabajo "Estrategia de intervención en niños víctimas de acoso y violencia escolar", fue diseñado para evaluar e intervenir, con base a las escalas de daño psicológico encontradas, con técnicas de terapia cognitivo conductual, terapia de exposición, procesamiento cognitivo, cuidado físico autoconocimiento, autoaceptación y aprender a ver los recuerdos como una herramienta. Objetivo: Elaborar y aplicar una estrategia de intervención en niños víctimas de violencia y acoso escolar. Metodología: Esta investigación fue de tipo experimental y mixta, en donde se combinaron los enfoques cualitativo y cuantitativo. En este trabajo se utilizaron los dos enfoques porque al evaluar a los niños con el test AVE se hizo por medio de percentiles, al momento de describir los conceptos de las escalas se hizo de una manera cualitativa, al igual que al registrar los avances de los pacientes en el Registro anecdótico. Aportación: una serie de técnicas para la atención en caso de acoso y violencia escolar.

Violencia Escolar, Víctimas, Autoimagen negativa, Flashbacks

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Introduction

Piñuel y Oñate (2006), definen el acoso escolar como un The continued and deliberate verbal and modal abuse of a child by another or others who behave towards the child in a cruel manner, with the aim of subduing, intimidating or threatening the child in order to gain a benefit or to satisfy a need to dominate, subdue or attack. Bullying is distinguished from other situations of violence by three fundamental characteristics: intention, repetition and duration.

In this paper, two cases of minors who are victims of bullying and school violence are presented: The first is an 11-year-old girl and the second is a 6-year-old boy, both of whom are in primary school. Therefore, the AVE Bullying and School Violence test by Piñuel and Oñate (2006) was applied to verify that these two cases were indeed victims of bullying and school violence, and also to evaluate the scales of psychological damage presented by the patients. Based on the results of the test and the similarities in the scales of both cases, an intervention strategy was developed that could be carried out with the two patients at the Municipal Children's Hospital during the period of residency and social service at the Faculty of Psychology and Human Communication Therapy.

The strategy used techniques such as: cognitive behavioural therapy, exposure therapy, cognitive processing therapy, physical care, self-knowledge, self-acceptance, appreciating what one has and learning to see memories as a tool rather than as something that could direct the children's lives.

Rationale

For authors such as Vera *et al.* (2017), school violence and bullying involve various actors: the victim, the perpetrator, the spectator, observer, witness, educators, administrative staff, parents and/or the community, all of whom have an important role to play when it comes to intervening in the problem. It is for this reason that a victim-focused test should be used in this context, as it is the victim who comes to receive psychological therapy.

The treatments proposed by Burbrik (2010), Ehmke (2017), Cifuentes, (2016) and Darder (2017) are specifically to treat the psychological damage that was found with the scales, they are aimed at children and young people, nor do they represent any risk as their use has been documented previously by the authors already mentioned.

These treatments aim to help patients manage anxiety, identify what is causing it, help children to express what they feel and to talk about the bullying problem in an open way and motivate them to feel able to do things for themselves. Another advantage of these treatments is that they try to involve the parents or guardians of the patients in the treatment.

Piñuel and Oñate (2006) point out that bullying is very serious in periods such as childhood and adolescence because the victims tend to believe that they do everything wrong, they think that they are really a disaster, that they are hopeless and that those who accuse them are right, some children resort to suicide.

Álvarez (2019) and Hernández (2017) mention that the psychology professional is responsible for the actions of promotion, prevention, intervention, treatment and recovery of the mental health of the victims, seeking to favour protective environments in the family, school and community for this reason the educational authorities were also involved.

Problem

There is currently an increase in cases of bullying and school violence in basic education schools in our country.

According to the Organisation for Economic Co-operation and Development (OECD), in Loyalty for Michoacán (2022), our country has as a reference that 50% of students suffer violence or bullying.

For decades, various government ministries have developed strategies to address these cases (Government of Mexico, 2016); however, in the face of such a phenomenon, it is necessary that public institutions dedicated to the mental health care of the school-age population take the necessary measures to prevent and address these types of problems.

Objectives**General Objective**

To develop and implement an intervention strategy for child victims of violence and bullying.

Specific Objectives

- To verify the existence of bullying and school violence in patients.
- To evaluate the scales of psychological damage present in the patients.
- To elaborate an intervention strategy according to the scales found.
- To reduce the possible psychological damage in the victims of bullying and school violence.

Theoretical framework

In this section we will describe the theories and concepts referring to the terms bullying and school violence, which in English-speaking countries are known as bullying, as well as the psychological damage that bullying and school violence inflict on children and the intervention strategies that the authors propose for the damage found in the cases of this work.

Violence and bullying

The Ministry of Public Education (SEP) relies on Barragán *et al.* (2018) to define bullying as any intentional, targeted, frequent and unequal power behaviour (whether physical, age, social, economic, among others) that is exercised between students in the school environment, with the aim of subduing, exploiting and causing harm.

It is important to consider that in the dynamics of bullying, attention should not only be focused on the aggressor, but on all the figures involved in the school setting, taking into account that the same child can play one or more roles: bully, victim or spectator.

SEP uses the term school harassment, not bullying. The difference between the term bullying and violence and harassment lies in the language and what the term encompasses according to different authors:

For Vera *et al.* (2017) school violence refers to conflicts presented in the school environment that refer to insults, hitting or violent symbolic acts, such as exclusion, isolation and rejection.

For this author, the term bullying is one of the types of school violence that occurs frequently in educational institutions and is a universally accepted term, which in Spanish-speaking countries is known as acoso escolar, maltrato escolar, matoneo, agresión escolar, intimidación escolar, maltrato entre iguales o pares, acoso y violencia escolar or hostigamiento escolar.

Bullying refers to aggressive behaviour with the intent to harm, carried out consistently over a period of time, with unequal power and exercised by one or more students against one or more others.

The role of the family in cases of bullying and school violence

For the author Díaz-Aguado (2006), the family can provide the opportunity to learn trust, empathy and security, which are the pillars to prevent violence and bullying.

The family has the capacity to establish quality bonds based on mutual trust. This capacity begins to develop from the relationships that the child establishes with the most significant adults, with whom he/she learns what to expect from others and from him/herself.

The role of the family in cases of bullying and school violence

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The role of education authorities in cases of bullying and school violence

As well as the family, educational authorities such as headmasters and teachers play an important role in the prevention and intervention of bullying and violence at school, and in this work they have also played an important role.

The role of the psychologist in cases of bullying and school violence

Álvarez (2019) mentions that, in order to prevent bullying, it is necessary to previously analyse why it occurs, as it has a multi-causal origin, i.e.: individual traits of the victims, of the aggressors, family factors, school and community factors.

Psychologists work not only on risk factors, but also in the training of professionals in direct contact with students and their families; in advising the administration; and in the design and implementation of preventive programmes in schools and in the community.

Description of violence and bullying scales of the AVE test

Piñuel and Oñate (2006) point out that bullying has different modalities depending on the type of bullying behaviour that the child receives. These authors have designed an AVE bullying and school violence test aimed at victims that evaluates two aspects: scales of violence, bullying and scales of psychological damage.

The test is carried out using a 94-question format, and when the format is completed, the results are sent to the TEA Ediciones website via internet using a security pin included in the application manual. The questions for each scale are randomly distributed in the aforementioned questionnaire.

Background

According to what was observed during the residency period, there were some cases of children who came to the psychology department of the Municipal Children's Hospital of the State of Durango due to problems in the school environment that affected their self-esteem, performance and social relations.

The cause mentioned by parents or guardians coincided in that it was due to "bullying" which, as mentioned above, refers to situations of violence and harassment at school. During this period of time at least 26 cases with the same problem came to the institution, the patients were attended by psychologists working in the hospital and by resident students or interns.

During this time we worked with three children who presented bullying and school violence and before starting Residency III, two new cases were selected for this report, which was discussed and dealt with by the head of the Psychology department and Social Work, and the consent of the people who referred the children was recorded in the hospital files.

Under these circumstances, it was proposed to the corresponding authorities to apply the AVE Bullying and school violence test by Piñuel and Oñate (2006), in order to know the scales of psychological damage in patients who are victims of violence and bullying and in this way find a strategy to be able to intervene appropriately. It is important to point out that in this institution, health professionals, according to their training, are free to use the methods they consider appropriate for the well-being of patients, so there is no established use of assessment instruments, but there are files with worksheets.

Research methodology

This research was experimental. This is a type of study in which some factor or circumstance is manipulated in order to test what effect this modification has on another phenomenon. On this occasion, techniques were applied to reduce psychological damage in patients.

As well as mixed, where qualitative and quantitative approaches were combined. In this work both approaches were used because when assessing the children with the AVE test it was done by means of percentiles, when describing the concepts of the scales it was done in a qualitative way, as well as when registering the progress of the patients in the Anecdotal Record.

Procedure

Two patients of different sex, age and school grade, but similar in that they both presented problems of bullying and school violence, participated in the study.

For this study we used the AVE Acoso y violencia escolar test, by Piñuel and Oñate (2006) from TEA Ediciones. This questionnaire assesses physical and psychological bullying, as well as associated psychological harm.

It has been validated with a normative sample of children and young people from 222 classrooms from 2nd grade of primary school to 2nd grade of high school in the city of Madrid, Spain, with a total of 4062 subjects. Its reliability was calculated using Cronbach's alpha coefficient with values between 0.78 and 0.95.

The authors mention in the Application Manual that this test is divided into two parts, the first part corresponds to the scales of bullying and school violence, they also point out that these scales are the important part of the test with which it is possible to intervene in the school context.

The second part of the test consists of the scales of psychological harm, although these scales are not sufficient to make a pathological diagnosis, they are useful for working in the clinical setting, and are marked in cream colour in the tables mentioned above.

Therefore, for this research, the scales of bullying and school violence were used in order to raise awareness and ask for help from the educational establishment where the patients develop, also to verify bullying and school violence, while in consultation we will work with the scales of psychological damage.

The questionnaire has percentiles for scoring. The percentiles indicate the achieved level of bullying or psychological harm data by means of the following levels:

Up to the 60th percentile: Not found.
From the 61st to the 80th percentile: No evidence.

From the 81st to the 85th percentile: Well established. From the 85th to the 99th percentile: Very well established.

The AVE test also has sixteen pairs of contradictory questions in order to check that the children have answered the questions carefully and that they have been understood.

Results

In this section we present the analysis of the results of the application of the AVE test in Table 1 and Table 2, since the first objective of this project is to verify the existence of bullying and school violence in the patients, we also show the results of the intervention strategy. To facilitate this analysis, Table 3 was made for Case 1 and Table 4 for Case 2.

In the application of the AVE test, as explained above, percentiles greater than 60 are considered to be the found scales, which are represented by colours in the tables.

Up to the 60th percentile: Not found (Blank spaces)
From the 61st to the 80th percentile: Found (Pink colour)
From the 81st to the 85th percentile: Well found (Yellow colour)
From the 85th to the 99th percentile: Very found (Blue colour)

Results of the application of the AVE Test Case 1		
Scale	Level achieved	Percentile
Global Harassment Index	Reported	64
Harassment intensity	Noted	64
Harassment	Well established	83
Bullying	Not established	40
Threats	Not established	25
Coercion	Not established	0
Social blocking	Very well established	99
Social exclusion	Very well established	99
Social manipulation	No evidence	75
Aggression	Not established	50
Anxiety	Well established	80
Post-traumatic stress	No evidence	78
Dysthymia	Not established	53
Diminished self-esteem	Not established	33
Flashbacks	Not established	50
Somatisation	Not established	60
Negative self-image	Reported	78
Self-deprecation	Not established	12

Table 1 Results of the application of the AVE Test Case

In the table above it can be seen that the following features are found in the scales of bullying and school violence:

Overall bullying index, bullying intensity and social manipulation found, bullying are well found, social blocking and social exclusion very well found.

In the scales of psychological harm, the following were found: Post-traumatic stress and negative self-image were found to be well established, while anxiety was found to be well established.

In the application of this test only one contradiction out of sixteen possible contradictions was found, which shows that the questionnaire was answered seriously and the questions were understood.

Results of the application of the AVE test Case 2		
Scale	Qualification	Percentile
Global Harassment Index	Established	72
Harassment intensity	Very well established	99
Harassment	Not established	59
Bullying	No evidence	80
Threats	Not established	50
Coercion	Not established	25
Social blocking	Very well established	99
Social exclusion	Highly observed	99
Social manipulation	No evidence	71
Aggression	Very well established	99
Anxiety	No evidence	70
Post-traumatic stress	Very well established	93
Dysthymia	Not established	50
Diminished self-esteem	Not established	10
Flashbacks	Very well established	99
Somatisation	Not established	50
Negative self-image	No evidence	62
Self-deprecation	Not established	0

Table 2 Results of the application of the AVE Test Case 2

In the table above it can be found that the following features are found in the scales of bullying and school violence:

Global bullying index, bullying and social manipulation are found, intensity of bullying, social blocking, social exclusion and aggression are found to be very much found. In the scales of psychological damage, the following features were found: anxiety and negative self-image were found, post-traumatic stress and flashbacks were found to be very high.

In the application of this test only one contradiction out of sixteen possible contradictions was found, which shows that the questionnaire was answered seriously and the questions were understood.

The results of the research will now be mentioned according to the scales found in each case.

Scale of psychological harm found in the AVE test	Outcome after the intervention strategy
Anxiety	The child reflected on unpleasant events, mainly about the future, that she was afraid of and reflected on the reason for that fear, discovered by acting them out that they were not as real as she thought. She ordered the fearful events hierarchically by difficulty, acted them all out in the clinic and probably performed some of them in real life. She found that some things were not as complicated as she thought, such as talking to adults about problems. Improvements were reported in other contexts such as home and school in terms of decreased anxiety.
Post-traumatic stress	She reflected on the feeling of shame, but also understood that anyone can make a mistake and that this is no reason to stop participating. She understood that there was no reason to be ashamed of her appearance or clothes - in fact, the boy who assaulted her wore similar clothes - and she also appreciated the advantages of the house where she lives. She said that after some time the bully no longer bothered her, that she had even made friends at school, but that she was afraid that her friends would stop talking to her if the bully said bad things about her and her appearance or intelligence again. She understood that this situation did not have to happen again, as her classmates had no reason to think such things, and she already knew that she was intelligent and pretty. She also discovered that the aggressions she was receiving from this boy were due to a mockery that her classmates and she had previously made of him and that they had nothing to do with her looks or her intelligence.
Negative self-image	The girl reflected on her positive qualities. Her positive qualities were reinforced. She sought to develop a talent. Improvements were reported in other contexts such as family and social contexts as the child was made aware of her positive qualities.

Table 3 Results Case 1

Now that the progress of Case 1 has been mentioned, the following table shows the progress of Case 2:

Results Case 2	
Scale of psychological harm found in the AVE test	Outcome after the intervention strategy
Anxiety	<p>The child reflected on unpleasant events, mainly in the future that made him afraid, he also reflected on the reasons for this fear, and found that one of these fears was due to his grandmother telling him that she would leave him at school if he cried again, and he talked to her to avoid this situation.</p> <p>He reflected on the fact that crying was not bad for boys and girls and that he could ask for help when he was assaulted.</p> <p>He ordered the situations that frightened him in hierarchical order of difficulty, acted them out and discovered that even his aggressors looked funny, that he could always ask for help and that there was no way his family would abandon him at school because he cried.</p> <p>Progress was reported in other contexts and the child even reports living with the aggressor child.</p>
Post-traumatic stress	<p>The patient reflected on the act of crying or feeling ashamed, actions that were not bad and that not only girls can do it, as boys can also cry or feel ashamed.</p> <p>He also reflected on fear which is an emotion that warns him of something dangerous but sometimes it is not necessary because he cannot know that children do not want to play with him if he has not tried.</p> <p>He discovered that he could work with the child aggressor without being bothered.</p> <p>He understood that he can always ask for help and that it is not pleasant to presuppose some events that will happen in the future.</p>
Negative self-image	<p>The child reflected on his positive qualities.</p> <p>His positive qualities were reinforced at home.</p> <p>He sought to develop a talent, which was drawing.</p>
Flashback	<p>The boy reflected on the anger he felt when he remembered when the bully threw away his personal things and mistreated them, and he also thought about asking an adult for help when the incident happened again. He also reflected on the fear that threats generate in him, and was told not to be afraid because nothing would happen to him if he talked about it with the teacher or his family.</p> <p>The child reflected on situations that generate emotions: happiness, sadness, anger, dislike and fear.</p> <p>The child understood the usefulness of emotions.</p>

Table 4 Results Case 2

As can be seen in the two cases above, reflection on emotions and thoughts played an important role in the patients' improvement. In addition to the above, something that was very helpful was that the patients' families and educational authorities were involved in the process, as proposed by Nuño, A. *et al.* (2018) in the theoretical foundation of this work when explaining the role they should play.

For example, in the Anecdotal Record, it is reported that in Case 1 the girl's mother participates in the tasks given to the patient, this increased her confidence in herself and in her family, also that the school principal agrees to intervene and hold a meeting with the parents which stopped the situation of violence and bullying and improved the coexistence of the students.

According to the Anecdotal Record the same characteristics were also observed in Case 2: The patient's father visited him more often and spent time with him, his grandmother stopped scaring him that she would leave him at school if he cried, instead she talked to him and offered to help him every time something happened to him at school, this eliminated his fears and strengthened his confidence in himself and in his family.

The school that the patient Case 2 attends also held a meeting with the tutors of the children involved, they also implemented group integration dynamics, eliminating the situation of violence and bullying and improving coexistence among the students.

Analysis and conclusion

To conclude the present work, the objectives that were set at the beginning of this research will be mentioned and answered. The first specific objective was: "To verify the existence of bullying and school violence in patients".

To meet this objective, a standardised test was sought to confirm that Case 1 and Case 2 were indeed victims of bullying and school violence. This was found out by knowing the global bullying indexes and the bullying intensities of each of the cases, which are the scales that Piñuel and Oñate (2006) point out can confirm the presence or absence of bullying and school violence.

The second specific objective "To evaluate the scales of psychological harm present in the patients", these scales were verified with the second part of the AVE test. Case 1 and Case 2 had in common:

- Anxiety
- Post-traumatic stress
- Negative self-image

Only Case 2 presented the scale for the presence of flashbacks.

The third specific objective was: "To develop an intervention strategy according to the scales found". This strategy was developed based on the results of the AVE test and the consultation of authors such as: Burbrik (2010), Ehmke (2017), Cifuentes (2016) and Darder (2017), the techniques of the strategy can be summarised in the following table:

Intervention strategy techniques	
Scales found:	Techniques:
Anxiety	Cognitive behavioural therapy. Exposure therapy.
Post-traumatic stress	Cognitive behavioural therapy. Exposure therapy. Cognitive processing therapy.
Negative self-imagery	Physical care. Self-knowledge. Self-acceptance. Appreciating what you have.
Flashbacks	Seeing memories as a tool and not as a lake that directs life.

Table 5 Intervention strategy technique

In the table above it can be seen that not only one specific technique is used to treat cases of bullying and school violence, as it is possible to rely on different techniques and not only on one style of therapy, but it can also be seen that one technique can be used for different psychological harms. For example: Cognitive behavioural therapy and exposure therapy can be used to reduce anxiety and post-traumatic stress.

In general the treatments focus on the feelings and beliefs of the patients, for example: To treat post-traumatic stress the therapy mainly focuses on how the beliefs the patient has and how they affect his or her thinking or acting, but when treating flashbacks the therapy focuses more on how emotions modify the way the patient thinks or acts, because the therapy is directed at his or her mood.

The fourth objective was "To reduce possible psychological damage in victims of bullying and school violence". This objective was achieved by making both patients feel better, improve their self-image, reflect on their feelings, beliefs and integrate into their school and family environments. It is worth mentioning that in Case 2, the child reported continuing to have unpleasant memories, which was followed up with treatment and follow-up.

Finally, the specific objective of this research was to "Develop and apply an intervention strategy for child victims of violence and bullying". This objective was fulfilled by consulting authors who proposed techniques to treat the scales of psychological harm found and so the activities that were applied to the patients could be planned.

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The flipped classroom as a tool for learning at High School**El aula invertida como herramienta para el aprendizaje en el NMS**

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Abstract

One of the main problems faced by virtual or face-to-face education is the indifference, lack of motivation, and lack of interest that students show during their classes, which affects their academic performance. In this scenario, the teacher plays a determining role since he must seek and implement contextualized methodologies that capture students' attention to involve them in the learning process. Concerning the above, this research aims to identify the attributes of the flipped classroom for learning biology at the High School level. Besides, a quantitative descriptive and cross-sectional methodology took place to analyze this phenomenon. The results showed that the greater the use of tools with flipped classroom attributes, the students develop a comprehensive learning process with increased completion of activities and higher grade point averages, highlighting four main characteristics embedded in the flipped classroom: self-regulated learning, access to the content permanently, personalized teaching and active participation. Therefore, the contribution of the research lies in the innovative methodology for the biology teaching process based on independent learning with critical and reflective thinking.

Methodologies, Attributes, Innovative**Resumen**

Uno de los principales problemas a los que se enfrenta la educación virtual o presencial, es la desmotivación y falta de interés que muestran los estudiantes durante sus clases, lo que afecta su desempeño académico. Es en este escenario donde el docente juega un papel determinante, pues debe buscar e implementar metodologías contextualizadas que capten la atención del estudiante para involucrarlo en su proceso de aprendizaje. Tomando en cuenta lo anterior, la presente investigación tiene por objetivo identificar los atributos del aula invertida para el aprendizaje de la biología en el nivel Medio Superior. Con el propósito de analizar dicho fenómeno, se llevó a cabo una metodología cuantitativa descriptiva y de corte transversal. Los resultados mostraron que a mayor uso de herramientas con atributos de aula invertida, los alumnos desarrollan un proceso de aprendizaje integral con incremento de completamiento de actividades y promedios de calificaciones más altas, destacando cuatro atributos principales embebidos en el aula invertida: aprendizaje autorregulado, acceso al contenido de manera permanente, enseñanza personalizada y participación activa. Por tanto, la contribución del estudio radica en el aporte de una metodología innovadora para el proceso de enseñanza de la biología basado en aprendizaje independiente con pensamiento crítico y reflexivo.

Metodologías, Atributos, Innovador

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Introduction

There is a very close relationship between information and communication technologies (ICT) and the educational field, which brought a consequence for facilitators focussed on identifying the contributions of digital tools for the teaching-learning process. Moreover, students, being digital natives, are familiar with technology and applications when accessing information from social and academic contexts (Merla and Yáñez, 2016).

Regarding the educational process, it is clear that technology goes hand in hand with different methodologies that favor academic achievement in educational modalities, such as the case of the flipped classroom, which has generated positive results for educational actors (students and facilitators) during the teaching-learning process, especially in stages of confinement, for emerging remote teaching.

This methodology promotes students' previous knowledge, which arouses curiosity and knowledge deconstruction based on questions and interest in the subject. Those attitudes privilege teachers' classroom tasks, optimizing the time to answer questions, giving feedback, and generating a dialogue to foster the construction of new learning in an ideal environment, reducing school lag and enhancing academic performance (Cantuña and Cañar, 2020).

Given this context, this research aims to implement the flipped classroom as a strategy for autonomous learning in Biology, working in a virtual environment with students from a High school at the Benemérita Universidad Autónoma de Puebla.

Theoretical framework

The following lines present the theoretical aspects that support this study.

Flipped classroom

According to Salazar (2017), the flipped classroom is a learning method that motivates students to adopt an active role in knowledge appropriation through videos, audiovisual materials, and photos, to mention a few.

In this way, the teacher optimizes the time during the class, whether face-to-face or virtual, answering doubts and providing feedback about students' contributions.

Currently, every educational process is closely related to technology. In this scenario, the teacher reflects and chooses the appropriate digital tool to deliver the content so that learners can work asynchronously at their own pace, developing tasks that contribute to their academic performance. In this way, in the flipped classroom, the teacher gives the student the responsibility of reviewing the content beforehand, addressing their concerns, and deconstructing their knowledge individually during the class (Chapa, 2022).

The flipped classroom promotes learning from anywhere and at any time. However, to fulfill this purpose, the facilitator should accomplish a planned didactic intervention mediated by technology, inside and outside the classroom.

Virtual environment

A Virtual Learning Environment (VLE) is a type of educational web software that allows virtual training to support the implementation of Information and Communication Technologies (Cocunubo *et al.*, 2018).

Therefore, a VLE aims to capture the student's attention through an innovative, active, and creative teaching-learning environment, being a non-physical space. Moreover, such adaptation and creation is a task for the facilitator, who is responsible for including the necessary tools for the student's knowledge deconstruct process (Flores-González, 2020).

Moreover, the VLE implementation promotes interaction with other colleagues through the role of the mediating agent. That is why it is essential to highlight that in any teaching-learning process, the teacher is a mediator between the contents and students' learning process by designing didactic situations and organizing the teaching process to achieve the set objectives (Rodríguez and Barragán, 2017).

Autonomous Learning

For Mendoza (2017), autonomous learning is a process in which the student sets out purposes, methodologies, resources, evaluation processes, and learning spaces, acting as active individuals who use their previous knowledge to generate new ones and give them significance by regulating their apprehension process in terms of time, rhythm, and space.

The autonomous attitude during the learning process triggers high participation in decision-making that demand self-motivation and promotes the efficiency of academic achievement (Vázquez and Hernández, 2021).

Furthermore, autonomous learning is an intellectual process in which students implement cognitive and metacognitive strategies with specific purposes and structured procedures for knowledge appropriation triggered by intrinsic motivation and efficient self-regulation (Rodríguez, Hernández, and Dávalos, 2018).

Considering the above and derived from the pandemic experienced in 2020, Pineda (2018) points out the necessity to promote self-management and self-regulation in students by designing activities that contribute to their learning and with skills that encourage effective self-assessment.

Methodology

A quantitative approach with a descriptive and cross-sectional scope took place to analyze the study. There were two groups: an experimental and a control. The first learned in an educational intervention embedded in a virtual environment focussed on two flipped classroom prototypes designed with different formats and applications (prototype A and prototype B).

The flipped classroom methodology consisted of asynchronous interactions with contents through the digital resources provided by the facilitator in the virtual environment so that later in class, they actively develop tasks to favor knowledge. At the same time, the teacher helps with their doubts synchronously, potentiating students' performance through projects, debates, and experiments. It is worth mentioning that the control group continued learning in a traditional classroom without technology-mediated strategies or environment.

Regarding the sample, it consisted of 80 students (40 in each group) from the fourth semester taking Biology classes in a High school from BUAP, whose ages range from 16 to 17 years. Concerning the instruments, there were two prototypes measured according to standardized rubrics and checklists aligned to the generic competencies to identify if the flipped classroom allows learning biology based on its attributes: self-regulation of the learning process, permanent access to content, personalized teaching, and active participation in and outside the classroom.

Data collection and model analysis

Data collection was carried out in a natural context and without the intervention of the researcher to avoid bias in the study. The following lines present the models of analysis used to interpret data.

Dimension	Activity
Self-regulation of the learning process	Digital readings and forums
Permanent access to content	Digital readings and videos
Personalized teaching according to the student's learning styles	Representation of knowledge (infographics)
Active participation in and outside the classroom	Presentation of mini projects

Table 1 Prototype A
Source: Own Elaboration

In the self-regulation dimension of the learning process from prototype A, readings and forums were the most outstanding activities, and regarding access to content permanently were readings and videos. In personalized teaching, representations of knowledge were through infographics, and finally, for active participation in and outside the classroom, students presented mini-projects. The second analysis model based on prototype B is analyzed below.

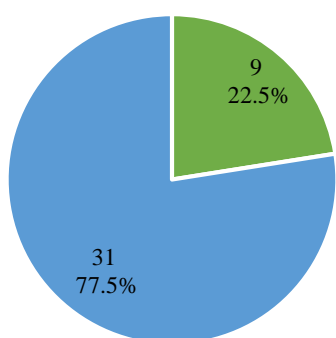
Dimension	Activity
Self-regulation of the learning process	Kahoot interactive exercises and escape rooms from the Teams platform
Permanent access to content	Infographics, crossword puzzles, and word search
Personalized teaching according to the student's learning styles	Comics (Pixton), concept or mind maps (Gocongr), video creation (Powtoon), anecdotes (Vocaroo)
Active participation in and outside the classroom	Presentation of projects through posters, infographics, or videos

Table 2 Prototype B
Source: Own Elaboration

In the self-regulation dimension of the learning process in prototype B, students work on interactive Kahoot exercises and escape rooms on the Teams platform. In the second dimension (permanent access to content), infographics, crossword puzzles, and word searches engaged users in a meaningful context. In the personalized teaching dimension, learners accomplished comics (Pixton), conceptual or mental maps (Gocongr), the creation of videos (Powtoon), and anecdotes (Vocaroo) to learn in a friendly environment. Finally, in active participation inside and outside the classroom dimension, they presented projects through posters, infographics, or videos.

The following section shows the results of prototype A, obtained in the control group.

Autonomous learning

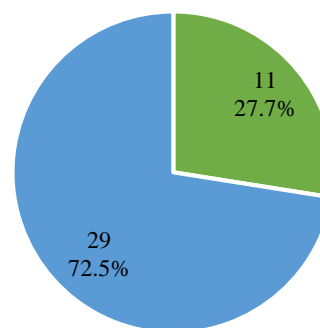


Graphic 1 Self-regulation of the learning process
Source: Own Elaboration

The evaluation of various activities through the generated instruments shows that 77.5% of the sample (31 students) achieves self-regulation of their learning from digital readings and forums, represented in attributes such as learning at students' pace (Hernández and Tecpan, 2017), making their discoveries (Torres, 2019) for knowledge construction through planning that precedes learning. They also implemented strategies to achieve goals and evaluations that led students to develop autonomy, an essential feature in the flipped classroom methodology.

On the other hand, 22.5% (9 students) did not achieve said self-regulation and showed low grades in completing the activities.

Permanent access to content

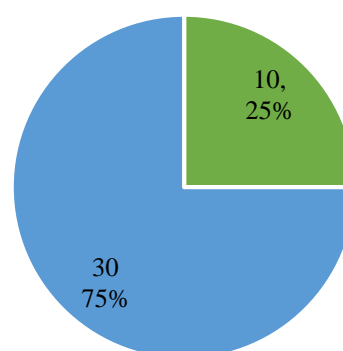


Graphic 2 Permanent access to content
Source: Own Elaboration

In this dimension, 72.5% (29 students) affirm the characteristic of the flipped classroom focused on unlimited access to content; that is, students can review any activity or thematic content as many times as necessary to enable their learning process flexibly regarding time and space. This characteristic allowed students to carry out content activities consciously with conceptual apprehension and in less time (Parrales *et al.*, 2020). Furthermore, unlimited access to technology-mediated resources such as digital readings and videos reinforced knowledge and the teaching process (García, 2020).

On the contrary, 27.5% (11 students) do not perceive the flipped classroom as a pedagogical approach that promotes unlimited and permanent access to content, preferring that the teacher provides explanations traditionally. It reflects the lack of autonomous learning and self-regulation strategies with a tendency to unidirectional learning centered on the teacher.

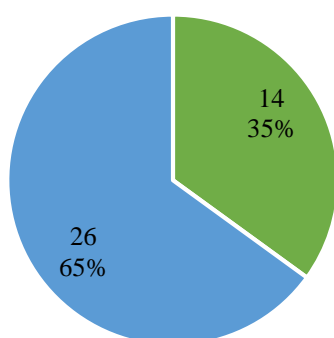
Personalized teaching



Graphic 3 Personalized teaching according to the student's learning styles
Source: Own Elaboration

The activities to measure the personalized teaching category indicate that 30 students (75%) perceive infographics as a tool to trigger autonomy, creativity, and critical thinking, promoting sociocultural students' development (Bergmann and Sams, 2014). Moreover, the activities allow learning according to their learning styles since the app makes it easy to embed audiovisual, interactive, and hypertext content. However, 10 participants (25%) do not appreciate the above characteristics, possibly because they lack the practical and experiential part since they did not register activity in this section.

Active participation



Graphic 4 Active participation in and outside the classroom

Source: Own Elaboration

Regarding active participation in and outside the classroom, 65% (26 students) characterize the flipped classroom as an ideal environment for training since it contributes to independent learning before coming to class and after synchronous interaction. They identify three phases:

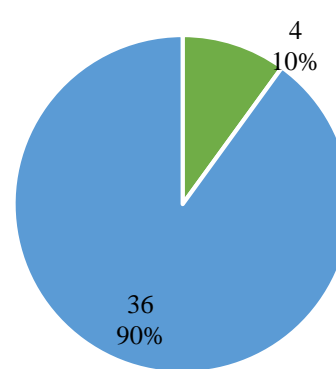
1. It occurs before the synchronous session and allows users to review the topic in advance through different exercises and audiovisual content, self-assessment, and note-taking regarding their doubts.
2. The session is synchronous. Here, students with the facilitator clarify doubts and practice through mini projects or interactions centering attention on students favoring skill development (Mafla, 2019).
3. Students reinforce their learning with extra activities mediated by technology outside the class. Such tasks are dynamic, interactive, and appropriate to their needs.

In summary, students identified the positive results of the flipped classroom indicated by Sandoval *et al.* (2021). On the contrary, 35% (14 students) did not register activity in this dimension. However, more than half of the sample distinguished relevant attributes or elements of the flipped classroom for teaching Biology.

Prototype B

The following section describes the results corresponding to prototype B of the experimental group.

Autonomous learning



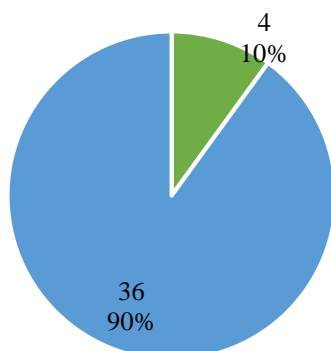
Graphic 5 Self-regulation of the learning process

Source: Own Elaboration

The self-regulation of learning generates in the student a self-reflection of the process for knowledge appropriation in such a way that he plans, monitors, and establishes criteria to evaluate his performance. Consequently, he shows a higher and long-term academic performance (Matzumura *et al.*, 2018).

This section reflects positive findings since the evaluation through performance criteria shows that 90% (36 students) develop self-regulation in the learning process. Even though 10% (4 students) do not perceive this section as useful for self-regulation, the previous findings make it possible to know that the higher the frequency of multimedia materials with flipped classroom attributes, the more learning of biology is encouraged autonomously in virtual environments. It is because these spaces demand careful planning of the process through the choice and construction of self-guided activities accompanied by evaluation instruments and multimedia materials (Fidalgo *et al.*, 2020).

Permanent access to content



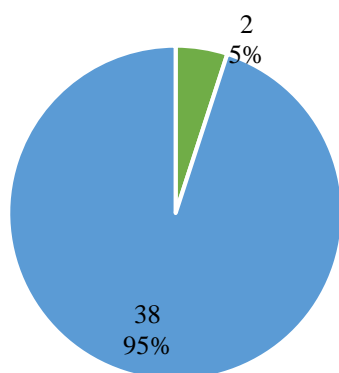
Graphic 6 Permanent access to content
Source: Own Elaboration

In this graph, 90% (36 students) affirm that they carry out a permanent interaction with contents to promote the development of generic competencies under the purposes that biology demands.

In this regard, Zainuddin and Halili (2016) point out that virtual platforms in a flipped classroom model provide students with access to specific content based on the program to work on it before, during, and after classes; that is, permanently and indefinitely.

In other words, the flipped classroom promotes active learning where the students' immersion is all the time to develop cognitive imbalances from the synchronous and asynchronous activities, relating their new knowledge to their previous one, and strengthening continuous interaction with students' content and constant communication with their peers leading to meaningful learning.

Personalized teaching

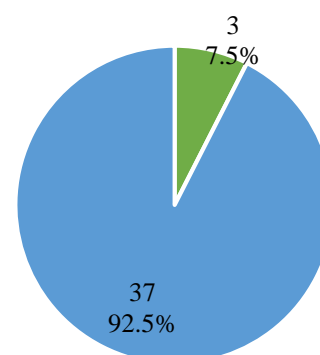


Graphic 7 Personalized teaching according to students' learning styles
Source: Own Elaboration

One of the characteristics of the virtual classroom focuses on methodologies that meet students' needs and learning styles. In this regard, the graph reveals beneficial results in the flipped classroom implementation because 95% adopted a reflective learning style, leaving the theoretical one in second place, corresponding to the learning styles in virtual modality as indicated by Santos (2016).

Further, digital tools in each activity provided variability to the learners' roles and learning styles through audiovisual, hypertext, and interactive materials.

Active participation



Graphic 8 Active participation in and outside the classroom
Source: Own Elaboration

92.5% of the students recognize active participation outside and inside the classroom when using the flipped classroom as a pedagogical approach. Such results coincide with Berenger (2016) and Del Pino *et al.* (2016), who affirm that one of its benefits is students' responsibility and participation and teachers' collaborative and active work in class to attend to needs, doubts, and questions in a personalized way. In addition, it provides the student spaces to review or do exercises related to the contents and learn at their own pace permanently since this is a multidimensional approach that implies a methodological change in the classroom (González and Huerta, 2019).

In summary, in prototype B, there is more completion of tasks because of the variability of digital tools in activities.

Comparison chart

The following table shows the average scores for each dimension from prototypes A and B.

Grade average		
Dimension	Prototype A	Prototype B
Self-regulation of the learning process	8.1	9.4
Permanent access to content	7.6	9.4
Personalized teaching according to students' learning styles	7.9	9.9
Active participation in and outside the classroom	7.1	9.6

Table 3 Average scores for each dimension from prototypes A and B
Source: Own Elaboration

The comparative table shows that the greater the use of digital tools with flipped classroom attributes, the students show a higher performance in their grades.

From the previous findings, it is evident that the study contributes theoretically by providing an innovative technology-mediated teaching methodology, which alludes to fostering the learning process at all times. This way of working is not synonymous with homework since it is a more complex process in which planned activities are according to performance indicators for autonomous learning, transforming knowledge into practical and lifelong learning experiences.

Conclusions

This study identifies the flipped classroom as suitable for learning by working on tasks outside school and optimizing the time allocated to face-to-face, virtual and hybrid sessions.

A second conclusion focuses on the characteristics of this pedagogical approach, where the techno-pedagogical design is decisive to achieve coverage with self-regulated learning, access to permanent content with activities that trigger learning styles according to the students, and active participation at all times.

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Teacher evaluation is myth or reality for teaching innovation

La evaluación docente es mito o realidad para la innovación de la enseñanza

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Abstract

Many teachers have a culturally learned negative perception of teacher evaluation. The objective of this research is to measure teachers' perceptions regarding the evaluation of pedagogical performance, as a basis for educational innovation. Teachers are influenced by negative cultural learning and/or internal fears of evaluation. Research methodology: the design is quantitative, non-experimental, the data collection is transactional with a piloted instrument that contains 136 variables in three axes: evaluation of the professional teaching service, commitment and labor innovation, and quality of teaching. Randomly 392 teachers are measured. The analysis is descriptive; Correlational and Principal Components. The conclusions reflect the current educational paradigm, unfavorable learned attitudes towards evaluation and fear of being exposed with evaluations, arguing that they focus on theory and omit professional praxis. Contribution of results. The relevance of evaluating teaching work is underlined, as support for teaching-learning innovations towards new hybrid pedagogical models. Teacher training focuses on changing positive attitudes towards job evaluation, as a factor "a priori" for educational innovation. The importance of motivating teaching commitment and research to innovate learning models by transforming post-pandemic paradigms.

Teacher evaluation, Didactic perception, Educational impacts

Resumen

Muchos maestros tienen una percepción negativa culturalmente aprendida de la evaluación docente. El objetivo de esta investigación es medir las percepciones magisteriales respecto a la evaluación al desempeño pedagógico, como base para la innovación educativa. Los docentes son influenciados por aprendizajes culturales negativos y/o miedos internos a la evaluación. Metodología de la investigación: el diseño es cuantitativo no experimental, la recolección de datos es de corte transeccional con un instrumento piloteado que contiene 136 variables en tres ejes: evaluación del servicio profesional docente, compromiso e innovación laboral y calidad de la enseñanza. Aleatoriamente se miden 392 docentes. El análisis es descriptivo; correlacional y con Componentes principales. Las conclusiones reflejan el paradigma educativo actual, actitudes aprendidas desfavorables hacia la evaluación y miedo a ser expuesto con evaluaciones, argumentando estas enfocan en teoría y omiten la praxis profesional. Contribución de resultados. Se subraya la relevancia de evaluar el trabajo docente, como sustento para innovaciones de enseñanza aprendizaje hacia nuevos modelos pedagógicos híbridos. La capacitación docente se centra en cambiar actitudes positivas ante la evaluación laboral, como factor "a priori" para la innovación educativa. La importancia de motivar el compromiso docente y la investigación para innovar los modelos de aprendizaje transformando paradigmas postpandemia.

Evaluación docente, Percepción didáctica, Impactos educativos

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Introduction

Primary education teachers are the agents of change in the development of people, they carry out a formative work where the evaluation of the administration of the educational institution where they work dedicated to the learning of a diversity of students is presented, the Ministry of Education constantly evaluates the performance of its workers to develop diagnostics that allow the timely attention of teachers, students and support staff to carry out actions for continuous improvement pedagogical, teacher training and others that allow the development of the entire educational institution. The evaluation of teachers, students, support staff and other indicators such as infrastructure of suitable learning spaces, systems and functional pedagogical models, which are reflected in the study programmes that make up the curriculum and are applied by teachers to achieve learning and formal development of students at any school level.

The evaluation of any school indicator is implemented as a basis for decision making of all kinds: academic, financial, procedural, administrative, etc.

This research aims to really know the opinions of teachers active in primary education regarding the evaluation of teacher performance, with formative intentions of personal development and to bring new expectations and support in learning required by students in their diverse range of peculiarities and personal differences.

The central thesis deals with innovation in the evaluation of the professional teaching service through the commitment and quality of teaching, for which it is necessary to investigate the perspective of teachers with didactic experience in professional practice.

Escribano, Gutiérrez, Bando, Martínez & Guevara and Martínez & Yaniz-Álvarez et. al state that evaluating teaching promotes the improvement of work where areas of opportunity for professional development are recognised, so that teachers can access courses and diplomas that prepare them for quality teaching. Condor & Remache (2019), state the need to qualitatively assess the teaching process, to know which elements require positive change.

2. Methodology

A non-experimental, quantitative research was carried out with an instrument elaborated with 9 complex variables, 136 simple variables immersed in 3 axes: evaluation of the professional teaching service, work commitment and teaching quality. The opinion questionnaire was piloted to evaluate its validity with a Cronbach's alpha of 0.93. Data were collected in a vertical cross-sectional application in 6 primary schools. The random sample was 392 primary school teachers out of a population of 12,640 active teachers.

3. Results of the data analysis

It was carried out at three levels: descriptive, correlational and multifactorial with the Principal Component Method.

3.1. Descriptive analysis

Using percentages and central tendency statistics, it was found that: the majority of primary education teachers in the public education system in the State of Coahuila are women, young adults with few years of service, a third of them have improved their salary, almost all of them graduated from a teacher training college, six out of ten do not practice sports, most of them have a reading habit and all of them use virtual technological tools, and a third of them have parents with a university degree.

3.2. Correlational Analysis

It was applied with Pearson's method with an $r^2 = 0.50$. The main correlations obtained in the Teaching Work Commitment axis show that teachers who are committed to their work tend to develop suitable learning environments, practice ethics, seek constant professional preparation, communicate assertively, prepare classes, innovate in didactic strategies, evaluate teaching practices, work collaboratively and promote shared leadership.

The correlations present in the Evaluation of the professional teaching service axis are: have positive emotions, carry out educational management, value interculturality, work collaboratively, participate in the Technical School Council, share leadership, plan classes, take advantage of the environment, generate learning environments, feel a work identity and passion for teaching.

In the Quality of teaching axis, the aspects that are correlated are: they generate learning environments, they are inclusive, they promote sustainability, they develop teaching competences and they are responsible in their teaching work.

3.3. Factor analysis

The multivariate method of Principal Components was applied, which explains 44.9% of the total phenomenon under study. Of the 21 factors present, the four with the greatest explanatory weight were analysed: 1st The evaluation of teaching commitment, which is present when there are ethical values, competencies in educational practices and a vocation for service. 2nd Quality of teaching, which involves planning teaching work, generating positive learning environments through the use of environmental resources and tends to promote collaborative learning. 3rd Negative perception of evaluation, where teachers show negative emotions of rejection of the evaluation of teaching performance. 4th Teaching competences, which refer to the mastery of theoretical contents, selection of didactic strategies and application of continuous evaluation during teaching practice.

Factor	Total	% Variance	% Accumulated	Total
1°	31.926666	27.05649658	27.05649658	21.84379702
2°	8.70082114	7.373577234	34.43007381	1.695378207
3	6.99217957	5.925575908	40.35564972	10.22046998
4	5.4233176	4.596031867	44.95168159	8.908551919

Table 1 Total variance explained in Principal Components

4. Conclusions

Among the important conclusions, which reflect the opinions of the sample of teachers are: immersed in the current educational paradigm, teachers have an unfavourable attitude towards evaluation, a coincidence that is perceived with the culture of the country, which is not used to being formally evaluated.

The standardised tests of the Ministry of Public Education to which teaching professionals are subjected show a high memoristic and theoretical content, as well as lacking an objective assessment of continuous, developmental and formative professional teaching practice.

The quality of teaching involves formative evaluation to assess the strengths and weaknesses of teacher performance. The main difficulty in this is the resistance of most teachers to their job evaluation due to the learning culture of Mexicans, as well as the personal fear of being judged and compared with their colleagues.

In order to achieve innovations in the teaching work, formative evaluation is necessary and obligatory as a diagnosis to be able to develop the different indicators that make up the formal teaching and learning process in our country, including proactive and formative teacher evaluation in order to make decisions about professional development, pedagogical and institutional service.

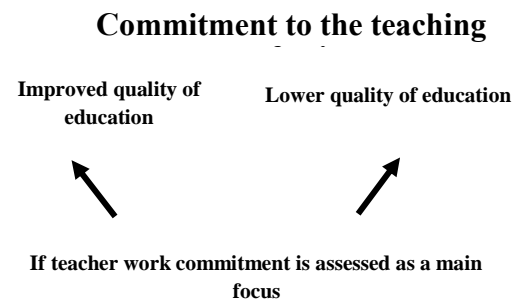


Figure Representation of the central thesis with the relationship between the research axes
Source: Own Elaboration

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Evaluation of the level of risk due to alcohol consumption and associated factors, in first-entry students at a University Campus in Jalisco, Mexico**Evaluación del nivel de riesgo por consumo de alcohol y factores asociados, en estudiantes de primer ingreso a un Centro Universitario en Jalisco, México**

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Abstract

Alcohol consumption in university students is considered a public health problem that can affect academic performance. The objective was to evaluate the level of risk for alcohol consumption in first-entry students at the University Campus of Biological and Agricultural Sciences of the University of Guadalajara. A questionnaire was applied that included: sociodemographic characteristics and alcohol consumption through the "Alcohol Use Disorders Identification Test" (AUDIT). The information was collected anonymously, obtaining their informed consent and guaranteeing their confidentiality. 589 students were surveyed, with an average age of 19.1 years, 53.2% women and 46.8% men, 86.4% reported having consumed alcohol, with tequila and beer being the preferred alcoholic beverages; it was observed that alcohol consumption did not influence the family relationship with their parents or the average high school grade; Regarding the AUDIT, 83% of the respondents did not present problems with alcohol consumption, 12.9% need a simple advice to reduce consumption, 3.1% evidenced risky consumption, and 1.0% showed risk of dependence; so it is necessary to implement strategies for comprehensive education in university life.

Alcohol consumption, AUDIT, University Students**Resumen**

El consumo de alcohol en jóvenes universitarios es considerado un problema de salud pública que puede afectar el rendimiento académico. El objetivo fue evaluar el nivel de riesgo por el consumo de alcohol en estudiantes de primer ingreso al Centro Universitario de Ciencias Biológicas y Agropecuarias de la Universidad de Guadalajara. Se aplicó un cuestionario que contempló: características sociodemográficas y consumo de alcohol mediante la prueba "Alcohol Use Disorders Identification Test" (AUDIT). Se recabó la información de manera anónima obteniéndose su consentimiento informado y garantizando su confidencialidad. Se encuestaron 589 alumnos, con edad promedio de 19.1 años, 53.2% mujeres y 46.8% hombres, el 86.4% señaló haber consumido alcohol, siendo el tequila y la cerveza las bebidas alcohólicas preferidas; se observó que el consumo de alcohol no influyó en la relación familiar con sus padres ni en la calificación promedio del bachillerato; respecto al AUDIT, el 83% de los encuestados no presentó problemas con el consumo de alcohol, 12.9%, necesita un simple consejo para la reducción del consumo, 3.1% evidenció un consumo de riesgo, y 1.0% mostró riesgo de dependencia; por lo que es necesario que se implementen estrategias para la educación integral en la vida universitaria.

Consumo de alcohol, AUDIT, Universitarios

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1. Introduction

Alcohol consumption as a social practice is a public health problem that affects consumers regardless of age or sex, and is a topic of interest due to the short and long-term consequences. Alcohol is the main drug of initiation and with the greatest impact on psychosocial functioning (Cortaza-Ramírez *et al.*, 2022; Gogeochea-Trejo *et al.*, 2021; Morales-Quintero *et al.*, 2019), being diverse causes that intervene between alcohol consumption to illegal drugs; alcohol intake is associated with low risk perception and high social tolerance to its consumption (Instituto Nacional de Psiquiatría Ramón de la Fuente Muñoz, Instituto Nacional de Salud Pública, Comisión Nacional Contra las Adicciones, and Secretaría de Salud [INPRFM, INSP, CONADIC, and SS], 2017).

The factors that influence alcohol consumption, can be biological, personal, family, psychological, school, environmental, and social (Ahumada-Cortez *et al.*, 2017; Mancilla and Alfaro, 2022). The abuse in the consumption of alcoholic beverages is a factor that causes more than 200 diseases and disorders, it also causes disability and death at an early age (20 to 39 years). Diseases related by long-term constant alcohol abuse are mental disorders, liver cirrhosis, different types of cancer, cardiovascular diseases, trauma resulting from violence and car accidents (World Health Organization [WHO], 2018; Japan and Valley, 2022).

More than a quarter (26.5%) of the world's population aged 15-19 years are drinkers, representing 155 million adolescents (Pan American Health Organization/World Health Organization [PAHO/WHO], 2019). In Mexico, alcohol is used more frequently by young adults, especially in those attending higher level schools (Díaz *et al.*, 2008), data from the National Health and Nutrition Survey (ENSANUT) show that alcohol consumption in Mexican adolescents has an annual prevalence of 38.3% with a daily and monthly consumption pattern of 0.8 and 26.6% respectively and binge drinking is 22.3% in males and 14.7% in females (Shamah-Levy *et al.*, 2020).

Góngora *et al.* (2019), reported that the age of onset of alcohol consumption is between 12 to 17 years, other studies mention that alcohol consumption increases from 20 to 24 years, age at which young people are in the stage of professional training at the university level, which can cause poor academic performance, health problems, lower productivity, lag and school dropout (Betancourth *et al.*, 2017; Gogeochea-Trejo *et al.*, 2021; PAHO/WHO, 2019). The causes for initiation into alcohol consumption are multiple: social, family, group, individual and even curiosity factors (Góngora *et al.*, 2019).

The age at which first-time university students are found ranges from 18 to 20 years old, at this stage young people go through a process of social adaptation, new friends and professional academic development, they begin to socialize and have activities where they are exposed to the consumption of alcoholic beverages (Betancourth *et al.*, 2017), added to this, in the university stage young people assume greater academic responsibilities, stress levels increase due to schoolwork, there is a greater commitment and greater freedom, among others, which can lead to a greater risk in alcohol consumption (Pilco *et al.*, 2021; Carrión *et al.*, 2022). Therefore, the objective of this study was to evaluate the level of risk for alcohol consumption in first-year students at the Centro Universitario de Ciencias Biológicas y Agropecuarias.

2. Methodology

A descriptive and cross-sectional study was carried out; the population of interest consisted of first-year students of the various undergraduate programs of the University Center for Biological and Agricultural Sciences (CUCBA) of the University of Guadalajara.

A questionnaire was used to collect data on two aspects: sociodemographic characteristics (age, sex, marital status, family relationship and average high school grade) and alcohol consumption by means of the “*Alcohol Use Disorders Identification Test (AUDIT)*”

The AUDIT is an instrument composed of 10 multiple-choice items that classifies the type of alcohol consumption of individuals into four risk levels according to the scores obtained: I) Low-risk drinking level (0 - 7), II) Scores appropriate for simple counseling focused on reducing risky drinking (8 - 15), III) Brief therapy and a continued approach is suggested (16 - 19) and IV) Diagnostic evaluation and possible treatment of alcohol dependence is required (20 - 40) (Bador *et al.*, 2001).

The purpose of the study was explained to the young people and the information was collected anonymously, obtaining their informed consent and guaranteeing their confidentiality. Students who provided incomplete data and those under 18 years of age were excluded from the study. The protocol of this study was approved by the Departmental College of the Department of Public Health and the Research Coordination of the University Center.

Data analysis was performed using descriptive statistics (frequencies, proportions and measures of central tendency) and the statistical significance of the differences observed was evaluated using Student's t-tests and chi-squared tests. (X^2).

3. Results

A total of 589 first year students participated in the study, 53.2% (n=313) were women and 46.8% (n=276) were men, with an average age of 19.1 + 2.3 with a median of 18 years, 99.2% indicated being single. According to the educational program to which the students entered, 219 belonged to Veterinary Medicine and Animal Science, 171 to Biology, 125 to Agronomy, 39 to Agribusiness and 35 to Food Science.

Regarding the consumption of alcoholic beverages, 86.4% (n=509) reported having consumed alcohol, with an average age of onset of consumption of 16.5 years \pm 1.65 (SD) in women and 16.1 years \pm 1.87 (SD) in men. The preferred types of beverages were tequila (41.3%) and beer (37.9%) followed by whiskey (18%) and vodka (14%).

When inquiring about consumption in the social and family context of the students, it was found that friends were the main group with whom they ingested alcoholic beverages (74.6%) being statistically significant ($p < 0.05$), followed by family members (36.8%) and to a lesser percentage, work colleagues (8.1%). Seventy-one point three percent of the women and 75% of the men mentioned that they consumed alcoholic beverages at parties and meetings. Among the main reasons young people mentioned for consuming alcoholic beverages were to socialize with friends (44.7%), to socialize at parties and gatherings (49%) and/or to celebrate an achievement (24.6%).

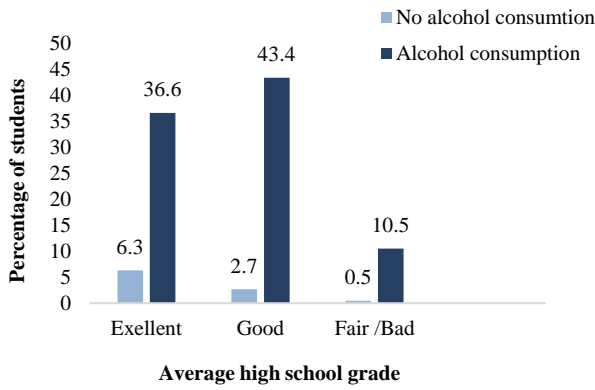
As for how the students surveyed consider their family relationship, 48.9% mentioned having an excellent relationship, 42.9% good, 7.7% fair, and 0.5% poor. When the family relationship with alcohol consumption was analyzed, it was observed that, although young people drink alcoholic beverages, this does not influence the type of relationship they have with their parents (Figure 1).



Graph 1 Family relationship and alcohol consumption among first-time CUCBA students

Source: Direct

Regarding the average grade obtained in high school, 42.9% (n= 253) had an average $>$ 90 which was classified for this study as (Excellent), 46.1% (n= 271) obtained a grade between 80 and 89.9 (Good), and 11% (n= 65) presented a grade lower than 80 (Fair-Bad). When relating the average high school grade of the students with their alcohol consumption, no statistical difference was found (Graph 2).



Graph 2 Alcohol consumption and average baccalaureate grade in first-time CUCBA students
Source: Direct

In relation to the prevalence of alcohol consumption according to the AUDIT test results, 83% (n=489) do not present problems with alcohol consumption, 12.9% (n=76) need simple advice to reduce consumption, 3.1% (n=18) present risky alcohol consumption and 1% (n=6) show risk of dependence. By gender, 47% of women were identified as having a low-risk level of alcohol consumption compared to 36% of men; however, the percentages are similar at level III where brief therapy and a continued approach are suggested (Table 1).

Consumption level	Feminine		Male		Total	
	n	%	n	%	n	%
I	277	47.0	212	36.0	489	83.0
II	29	4.9	47	8.0	76	12.9
III	8	1.4	10	1.7	18	3.1
IV	0.0	0.0	6	1.0	6	1.0
Total					589	100

I: Low-risk drinking level
II: Appropriate scores for simple counseling
III: Brief therapy and an ongoing approach suggested
IV: Diagnostic evaluation and possible treatment of alcohol dependence required.

Table 1 Type of alcohol consumption according to AUDIT by gender
Source: Direct

When comparing the results by bachelor's degree, it was observed that there is a greater number of first-time undergraduate students in Biology (90.1%) with low-risk consumption levels with significant statistical difference (p<0.05) in relation to Agribusiness students (69.2%), however, at level II the results show that the scores for Biology students are statistically lower (p<0.05) with respect to Agribusiness students (Table 2).

4. Discussion

The university population presents a high degree of vulnerability to alcohol consumption, due among other things to the access they have for the purchase of alcoholic beverages and the increase in situations that arise once they enter the university environment (Albarracín and Muñoz, 2008; Castaño-Pérez and Calderón-Vallejo, 2014). In the first years of study at university, alcohol consumption is often a tool used by young people to reduce their stress levels or negative feelings (Calvete and Estévez, 2009). The consequences of alcohol consumption at different levels of university life are reflected in poor academic performance, class absenteeism, depression and dropout problems (Albarracín and Muñoz, 2008; White *et al.*, 2000).

Consumption level		Bachelor's Degree					Total
		AGR	AGN	BIO	CALI	MVZ	
I	n	100 a, b	27 b	154 a	27 a, b	184 a, b	489
	%	80.0	69.2	90.1	77.1	82.6	83.0
II	n	19 a, b	9 b	13 a	7 a, b	28 a, b	76
	%	15.2	23.1	7.6	20.0	12.8	12.9
III	n	3 a	3 a	4 a	1 a	7 a	18
	%	2.4	7.7	2.3	2.9	3.2	3.1
IV	n	3 a	0 a	0 a	0 a	3 a	6
	%	2.4	0.0	0.0	0.0	1.4	1.0
Total		125	39	171	35	219	589

I: Low-risk drinking level
II: Appropriate scores for simple counseling
III: Brief therapy and an ongoing approach suggested
IV: Diagnostic evaluation and possible treatment of alcohol dependence required.
AGR: Agronomy
AGN: Agribusiness
BIO: Biology
CALI: Food Science
MVZ: Veterinary Medicine and Animal Husbandry

Table 2 Type of alcohol consumption according to AUDIT by CUCBA undergraduate program
Source: Direct

In the present study the results of ever drinking alcohol consumption showed a high prevalence (86.4%), similar to what was found by Armendáriz *et al.*, 2014 (92.2%) and Aguilar-Mena *et al.*, 2019 (92.2%), and differing from what was reported in the studies conducted in university students by Rodríguez *et al.*, 2022 (73.5%), López *et al.*, 2022 (70.5%) and Cortaza-Ramírez *et al.*, 2022 (64.6%), where the percentages reported are lower.

Regarding the average age of onset of alcohol consumption, what was found in this study also coincides with what was reported in the National Survey on Drug, Alcohol, and Tobacco Consumption 2016-2017 (INPRFM, INSP, CONADIC, and SS, 2017), in which the age of onset is 16.7 years and to what was found by Rodríguez-de la Cruz *et al.*, 2022 (16.6 years) and Cortaza-Ramírez *et al.*, 2022 (16.3 years) which could be due, among other causes, to young people experiencing a transitional stage to adulthood.

In this study, the alcoholic beverages most preferred by young people were tequila (41.3%) and beer (37.9%), a result that corresponds to that reported in other studies (Puig-Nolasco *et al.*, 2011; Telumbre and Sánchez, 2015); however, other authors report that beer is preferred by university students, probably because of its low cost and availability (Barrera *et al.*, 2020; Caro *et al.*, 2015; Cortaza-Ramírez *et al.*, 2022). It was found that a high percentage of the surveyed students (74.6%) prefer to consume alcohol with their friends, similar data reported by Betancourt *et al.*, 2017 (76.0%) and Cruz *et al.*, 2018, where they mention that students seek to have fun outside the academic days and alcohol allows them to achieve such purpose.

Arrijoja *et al.* (2017), consider that the social aspect is a predominant factor in alcohol consumption, the closest people (parents, relatives, partners and friends) become an influence for its consumption, that is, they function as a learning model. A high percentage of the students surveyed (91.8%) mentioned having an excellent/good family relationship, finding no association between alcohol consumption and the relationship of young people with their parents, which is consistent with the results of Sawyers *et al.* (2019), where 87% of university students indicated having a good relationship without showing association between this variable and alcohol consumption, however, Yeh *et al.* (2006), found that the relationship with parents does influence alcohol consumption, especially when young people have a conflictive coexistence with them and when the behavior is linked to their consumption.

On the other hand, regarding the relationship of the variables of average high school grade and alcohol consumption, no association was found in this study, however, Del Pino and Correa (2016), evidenced that those young people with average ≥ 9 tend to drink less alcohol while those with average of 7 find more reasons to ingest alcoholic beverages than those with grade of 9.

According to the AUDIT, it was identified that 83% of the students did not present problems with alcohol consumption, these results coincide with the study conducted by González *et al.* (2019), where the predominance of sensible consumption was identified and what was reported by Salomón (2020), where 70% of the students had an adequate consumption of alcohol, on the contrary, these data differ from those obtained by Cardona and Orjuela (2014), which show a higher risky consumption of alcohol.

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Conclusions

According to the results obtained from the AUDIT, the majority of students (95.9%), did not present problems with alcohol consumption and only a low percentage (4.1%) showed risky consumption and dependence to this substance, however, a high percentage of students indicated having consumed alcoholic beverages, which is worrisome because there are factors such as the influence of friends, a dysfunctional family environment, availability and easy access to alcoholic beverages that may favor their consumption and affect the academic performance of young people.

Therefore, it is necessary for the institution to design and implement intervention strategies regarding alcohol consumption that should be structured in a permanent support program within the University Center in order to strengthen comprehensive education from the first semesters until the end of the university stage and to know in depth the factors associated with alcohol consumption.

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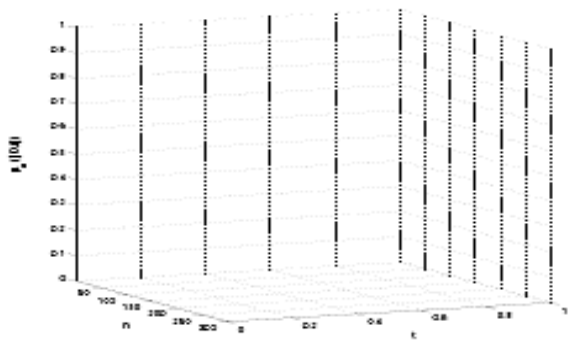
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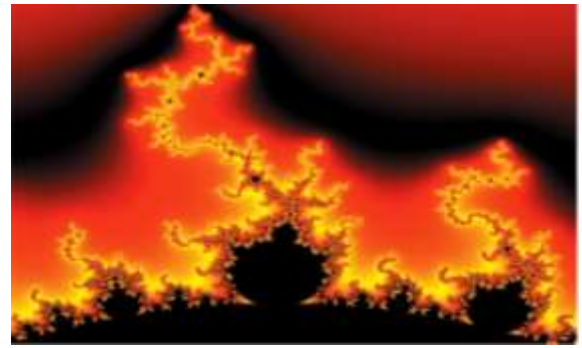


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Develop give the meaning of the variables in linear writing and important is the comparison of the used criteria.

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