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Knowledge Area

The works must be unpublished and refer to topics of education, crowdsourcing, operation of academics' corps, regional development, fiscal, architecture, networks and other topics related to Social Sciences.

Presentation of the Content

In volume nine, issue nineteen, as the first article we present, *Innovation in distance education*, by ESCAMILLA, Regis Daisy & MARTÍNEZ, Bahena Elizabeth, with secondment in the Tecnológico de Estudios Superiores de Cuautitlán Izcalli, as a second article we present, *Feel-think: the violin and me. Evelio Tieles and violin teaching in Cuba*, by JUAN-CARVAJAL, Mara Lioba & VDOVINA, María, with an appointment at the Universidad Autónoma de Zacatecas, as a third article we present, *Study for the validation of an instrument for foreign language learning*, by VIGUERAS-GONZÁLEZ, Alan & SANCHEZ-TRUJILLO, Magda Gabriela, with secondment at the Universidad Autónoma del Estado de Hidalgo, as fourth article we present, *Hyflex: approach in higher education in Mexico, Mexico*, by HIGUERA-ZIMBRÓN, Alejandro & RIVERA-GUTIÉRREZ, Erika, with secondment at the Nova Southeastern University and Universidad Autónoma del Estado de México.

Content

Article

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Innovation in distance education

Innovación en educación a distancia

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Abstract

The implementation of distance courses has allowed knowledge to reach a greater number of students immediately, in addition to this, it allows us to access information at the convenience of the participants, so the specific schedules, which promote a greater opening in the accesses and the way in which knowledge can be generated, is not married to a place, a time or a style, which is why it is increasingly necessary to be able to implement strategies that In addition, they generate real knowledge and a substantial use of the contents that are being shown, together with a wide range of strategies that range from the topics themselves, the reinforcement of activities through innovative technological tools and feedback and/or relevant evaluations to indicate the level of achievement that the student had within the specified period and that will allow him to continue advancing to reach his goal. Objectives, Methodology. The main objective of carrying out this work is to show the importance in the implementation of distance courses with the use of technological innovation tools, the advantages of students learning according to their needs and the advantages of having these important tools. support in educational instruction; In addition to presenting a representative sample on the application of a research technique that allows us to observe -by its results- that distance education has had a beneficial impact even more with the use of technological innovation tools in terms of promoting this instruction. in Higher Education Schools. Contribution. It seeks to demonstrate in a broad way, that encouraging students who cannot attend school in the required times, to seek education online, can help them obtain a degree without having to put aside meeting their needs through a job, distance education, will allow them to satisfy their self-realization needs and they will be able to collaborate significantly in the achievement of their medium-term objectives

Education, Teaching-learning process, educational tools

Resumen

La implementación de cursos a distancia, ha permitido que los conocimientos puedan llegar de forma inmediata a un número mayor de estudiantes, aunado a ello, nos permite que el acceso a la información se realice a conveniencia de los participantes, por lo que quedaron fuera los horarios específicos, que promueven una mayor apertura en los accesos y la forma en la que se puede generar conocimiento, no está casado con un lugar, un tiempo ni un estilo, por lo que cada vez se hace más necesario, el poder implementar estrategias que además, generen un conocimiento real y un aprovechamiento sustancial en los contenidos que se estan mostrando, aunado a una amplia gama de estrategias que abarcan desde los propios temas, el reforzamiento de las actividades mediante herramientas tecnológicas innovadoras y las retroalimentaciones y/o evaluaciones pertinentes para indicar el nivel de aprovechamiento que el alumno tuvo dentro del periódo especificado y que le permitirá seguir avanzando para llegar a cumplir su meta. Objetivos, Metodología. El principal objetivo de la realización de este trabajo, es mostrar la importancia en la implementación de cursos a distancia con uso de herramientas tecnológicas de innovación, las ventajas de que los alumnos aprendan de acuerdo a sus necesidades y las ventajas de contar con estas importantes herramienta de apoyo en la instrucción educativa; además de presentar una muestra representativa sobre la aplicación de una técnica de investigación que permite observar -por sus resultados-, que la educación a distancia ha tenido un impacto benéfico aun mas con el uso de las herramientas tecnológicas de innovación en cuanto a fomentar esta instrucción en las Escuelas de Educación Superior. Contribución. Se busca demostrar de manera amplia, que el incentivar a los alumnos que no pueden asistir a la escuela en los tiempos requeridos, a buscar educacion en línea, puede ayudarles a obtener un título sin tener que hacer de lado el cubrir sus necesidades por medio de un trabajo, la educación a distancia les permitirá satisfacer sus necesidades de autorealización y podrán colaborar significativamente en el logro de sus objetivos a mediano plazo.

Educación, Proceso enseñanza-aprendizaje, Herramientas educativas, Innovación

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Introduction

This article focuses on the importance of providing students with adequate tools for specific situations, where the transfer to the places of study can be considered a problem that prevents the academic development in an adequate way, sometimes even encouraging desertion, it is important to highlight that since the pandemic, there has been a boom in all learning resources that have some innovative tools for support and study in distance education, It is important to emphasise that since the pandemic, there has been a boom in all learning resources that have some innovative tools for support and study in distance education, and that approaching classrooms and educational institutions is currently becoming easier and easier, therefore, part of the solution lies in giving importance to the approach of technologies, teacher training (no matter the profile of the teaching staff) and the adaptation of environments that allow a secure internet connection and thus avoid setbacks due to lack of connectivity.

The added value that this type of education will bring with respect to face-to-face teaching is precisely the fact that, without having a specific place and time, we can all have access to the contents in any situation, which translates into a better acquisition of knowledge and the fact that, with the use of innovative technological tools that can be included in the lessons, the student can reinforce what they have learned, self-evaluating and promoting individual development as part of their comprehensive training.

An integral education implies that we must stimulate all aspects of the human being (rational, emotional, social, physical, aesthetic and spiritual), to build people with individual, social, historical and planetary awareness (Colegio Chimalistac, 2023). (Colegio Chimalistac, 2023).

Figure 1 Student participation
Source: (Pinterest, 2023)

Therefore, this research will demonstrate that by using the appropriate resources, students can acquire study habits that allow them to satisfactorily complete their studies at a higher level, allowing them to climb up the career ladder satisfactorily, leaving aside the vicissitudes they face in their daily lives.

The role of the teacher

Talking about the teacher implies the idea that he/she is the person who inculcates knowledge, who is in charge of establishing guidelines and control within the classroom, we are used to the image that he/she is the one who guides, applies, evaluates and carries out eighty percent of the activities in the classroom; However, we must face the fact that this paradigm is no longer viable, especially because we are faced with the fact that we are dealing with "technological" students, people who are capable of finding their own way of learning and generating self-knowledge, which is why, as instructors, we must change the way we show our role in the classroom:

1. To begin with, the term CLASSROOM is being distorted, since it is not only the physical space located within an educational institution; a classroom can be any space (material or virtual), which allows the student to acquire knowledge and reinforce it as far as their time and abilities allow.

2. The TEACHER must be constantly prepared and updated in their area of expertise, as the ability to "know" is immediate; the internet brings people together in real time, which causes a change in the acquisition of learning; it is no longer necessary or essential to consult a book.

3. EDUCATIONAL FACILITIES, must be able to include within their facilities, workshops and laboratories that are adapted to the demands of today's working world, allowing students to practice and application based on real problems for effective solutions.

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Figure 2 Distance learning
Source: (Pinterest, 2023)

The teacher must promote interaction with the students as part of the teaching-learning process, the contents must show analytical development and the observation of events that keep the student's motivation and participation active at all times.

The role of the learner

In principle, we must understand that in this type of education, the student becomes a self-regulator of knowledge, that is to say, he/she has the facility to carry out his/her own cognitive process in the way that best suits him/her, depending on his/her free time and the digital tools available to him/her.

This type of learner must be able to move from the traditional role of student to the role of self-regulator of their learning, acquiring skills and gathering their own resources to be able to satisfy their information needs favourably, adequately managing the knowledge that impacts on the area of training in which they are; The main function of students is to always learn new things about different subjects or branches of science and art, or any other area that can be put under study (Concept/Definition, 2023).

A proactive learner is intrinsically related to the acquisition of knowledge, which will allow him/her to investigate, propose and implement effective solutions according to the given situation approach for its resolution, motivating him/her to show his/her true interest and desire to learn.

Undoubtedly, one of the main challenges faced by this type of student is the fact of setting personal goals, as not everyone seeks to achieve the same results and some are conflicted by not being accompanied by people of the same educational level. It is important to emphasise that in this type of learning, one cannot be passive or expect to be directed; again, self-management of knowledge is of great importance.

The fact that the actors in this type of education are located in different spaces sometimes makes dialogue difficult, so it is also very important to be able to manage asynchronously the perceptions at the right moment and at the right time for the integral education of the students.

Impact of technology on HEIs

Technology is having an accelerated impact on different areas such as education; in the pandemic it was observed that it was necessary to make use of various technological tools as part of the teaching-learning process, where at the same time teachers could meet the objectives they had set from the beginning of the school year. For Higher Education Institutions (HEI), it was no different as they also had to rely on technological tools to support the learning process and even more without neglecting the practical part, since in these institutions it is a priority because they teach careers at engineering level.

On the other hand, there are HEIs that offer distance engineering courses where the use of platforms must be applied, which have instructional designs for each subject, as well as innovative technological tools, which contribute to the practical laboratories that are compulsory in some subjects, as they reinforce the theoretical part that has been acquired.

Methodology to be developed in the distance learning classroom

In the IES that we will study, currently teaches distance careers which are, Engineering in Computer Systems (ISC) and Engineering in Information Technology and Communications (Tics), both in their reticles have subjects that are theoretical and other totally practical, that is where teachers have to work with virtual laboratories and other tools of technological innovation for students to have the necessary knowledge that is requested in its reticle of the engineering they are studying, For this reason, this research will be experimental in nature, as it will study whether the tools used have been favourable for the development and experimentation required in the practical part, so that students have the skills that will enable them to develop in their professional life once they have completed their studies, as well as the advantages of using these tools in educational instruction, observing their results and the impact of distance education.

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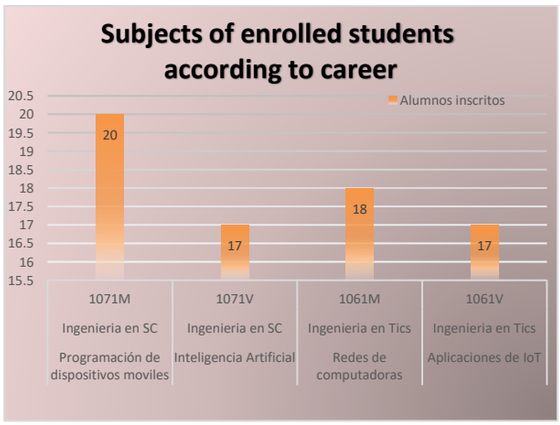
To begin with the research, we took as a sample subjects from each degree course that are totally practical and which require specific software to fulfil the competencies set out in each subject, then we will analyse the innovative technological tools on which the teachers relied and finally we will evaluate the use of each tool by the students.

In the ISC career, the subject taken as a sample was Mobile Device Programming and Artificial Intelligence, while in the Tics career, the subject taken was Computer Networks and IoT Applications; The subjects were considered because they have a high percentage of practice and impact according to their professional profile, as they are in advanced semesters, where later the impact of the knowledge acquired by the students can be evaluated, since at the end of the subjects a project will be requested where the use of the technological tools that were worked on during the semester will be implemented, likewise, an evaluation of the projects will be carried out, by teachers of the IES and invited entrepreneurs evaluating the impact of the use of tools of the projects as well as the feasibility of the same.

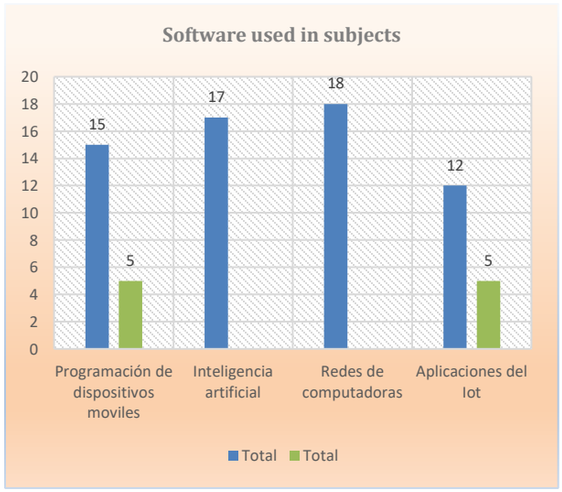
In the HEI where the research was implemented in period 22-2 there were the following groups, which took the sample subjects, as shown in graphic 1.



Graphic 1 Sampling of subjects and students
Source: (Escamilla, 2023)

Once the sample was taken, we began to investigate by means of an interview with the teachers who teach in these subjects, asking which were the technological tools on which they relied to be able to carry out the practical part requested by each subject, and the results obtained are explained below.

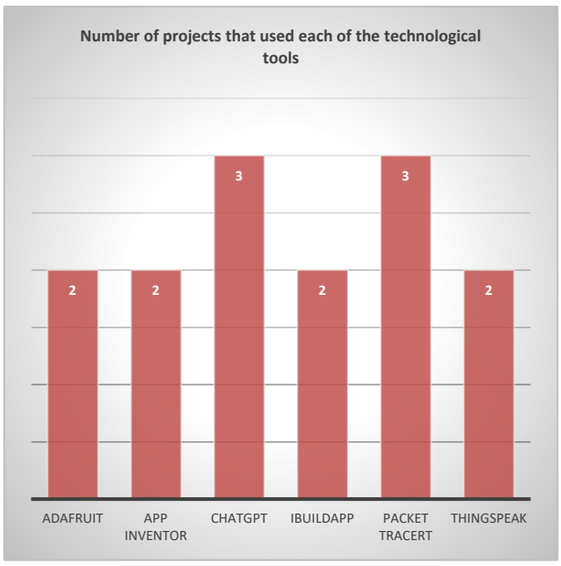
In the subject Programming of mobile devices of ISC, it was detected that group 1 uses the online program called APP Inventor, which is free software, with an environment to develop mobile applications with the Android operating system, they also make use of another program called iBuildApp, this software allows to create mobile applications in the same way for Ios and Android systems; On the other hand, in the subject Artificial Intelligence, group 2 made use of ChatGPT as it is an artificial intelligence application to engage in dialogue with users, while in the career of Tics in the group that took the subject Computer Networks make use of packet tracert this software is a simulator that allows the configuration and design of computer networks, And finally in the subject Iot Applications, they make use of two software in adafruit and thinSpeak which are software that are characterised by being Open Source that allows to store objects using HTTP protocol, so also allows to make simulation practices with arduino cards. All of the above can be seen in graph 2 below. It is worth mentioning that these softwares were proposed and used for having the characteristic of being free and portable on any device so that it is not complicated for the student.



Graphic 2 Software used in sample materials.
Source: (Escamilla, 2023)

Finally, as part of the research, a virtual session was organised in the company of four teachers from the same HEI and three invited businessmen, experts in the area of technology, who have requested students for professional internships; in this session the students presented their final projects requested by the teachers of each subject, so that they could evaluate the impact they had observed in the projects, their point of view on the tools used for their implementation, as it is a way of evaluating what the students can achieve in a working environment.

Fourteen projects were presented, of which graphic 3 shows which technological tool or software was used for development.



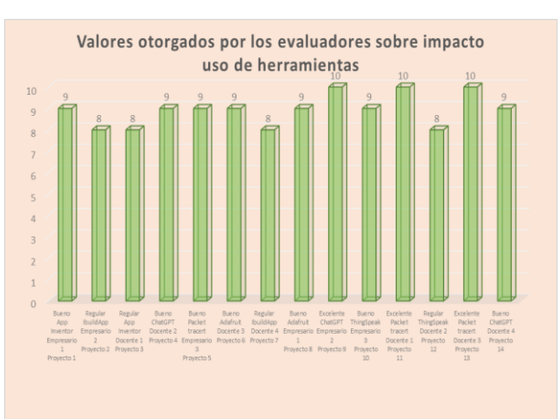
Graphic 3 Number of projects and tool they worked on
Source: (Escamilla, 2023)

Graphic 4 shows each of the values given to each project according to the impact of the technological tool used, where the values are considered according to table 1 below.

Evaluation	Range
Excellent	10
Good	8.5 – 9.9
Fair	7 – 8.4
Poor	less than 0

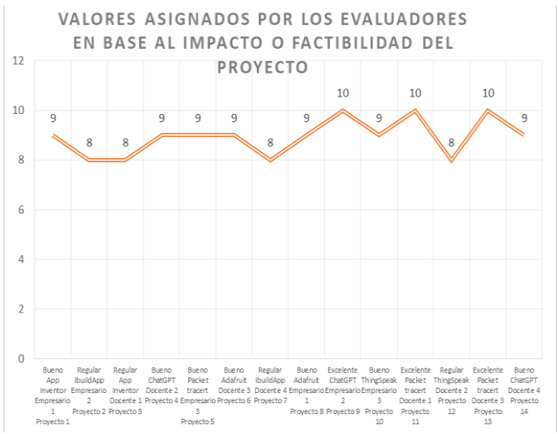
Table 1. Values considered in the evaluation scale.

As can be seen in the graph it is shown that in general the values placed by the entrepreneurs and teachers are good in the majority of the projects. This speaks of the fact that the tools used in the development of the projects are good or of impact for entrepreneurs and that they can be used as proposals for future projects that can be carried out with these projects.



Graphic 4 Evaluation assigned by the evaluators on the impact of the tool used in the project
Source: (Escamilla, 2023)

Consequently, the following graph 5 shows the impact or feasibility of the projects, which can be seen to be good and excellent according to the table of values mentioned above, since the evaluation given by the attendees considered the projects to be feasible to implement according to their areas of knowledge, which in this case is technological.



Graphic 5 Project evaluation based on impact or project feasibility
Source: (Escamilla, 2023)

Results

It can be observed as final results that the objective of the research was fulfilled, since it was possible to verify with the graphs that the innovative tools of which the teachers make use in their subjects at a distance, are of importance being demonstrated in each of the projects of the students, same that were exposed and of which the businessmen evaluated being these the ones that feedback that learning and impact that they have, likewise it was also shown that these projects have certain feasibility to be able to be implemented in the professional scope in the companies.

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Feel-think: the violin and me. Evelio Tieles and violin teaching in Cuba

Sentir-pensar: el violín y yo. Evelio Tieles y la enseñanza del violín en Cuba

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Abstract

Since the seventies of the last century, the methodological component of violin teaching in Cuba took roots in the Russian-Soviet school given by the academic link that favored the exchange of renowned teachers and students between both countries. The experiences, contributions and musings of this exchange and teaching process are collected in a book by the pedagogue Evelio Tieles. Its reading motivated the writing of this article whose objective is to highlight the correlated aspects among the Russian-Soviet school and the methodological principles of the teaching-learning process in Cuba, exposed in the book "Feel-Think: The violin and I", written by Tieles. For this, analytical-synthetic methods, document analysis and interviews with key informants were combined, which made it possible to identify methodological aspects of the teaching-learning process of the teaching of violin and viola in Cuba that have their foundation located in the Russian-Soviet school.

Teaching the violin in Cuba, methodology, Pedagogical Experiences

Resumen

Desde la década del setenta del pasado siglo, el componente metodológico de la enseñanza del violín en Cuba cimentó sus raíces en la escuela ruso-soviética dado por el vínculo académico que favoreció el intercambio de maestros reconocidos y de estudiantes entre ambos países. Las experiencias, aportes y reflexiones de esta enseñanza se han plasmado en un libro del pedagogo Evelio Tieles. Su lectura motivó la realización de este artículo cuyo objetivo es destacar los aspectos coincidentes entre la escuela ruso-soviética y los principios metodológicos de la enseñanza-aprendizaje del violín en Cuba, expuestos en el libro Sentir-Pensar: El violín y yo, escrito por Tieles. Para ello, se combinaron los métodos analítico-sintético, análisis de documentos y entrevista a informantes clave, lo que posibilitó identificar aspectos de carácter metodológico del proceso de enseñanza-aprendizaje de la enseñanza del violín y la viola en Cuba que tienen su fundamento en la escuela ruso-soviética.

La enseñanza del violín en Cuba, Metodología, Experiencias pedagógicas

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† Researcher contributing first author.

Introduction

The teaching methodology of the violin-viola and the way of playing of the Russian-Soviet-Russian school (due to its historical development), has recently had an extensive international diffusion, unlike its splendorous period in which, due to socio-political conditions, it was not sufficiently accredited. This boom is largely due to the process of globalization, the wide migration, the study and recognition in the artistic-cultural field through the different multimedia platforms, and to the presence of videos or recordings on the Internet along with other bibliographical ones, as well as due to the labor of violinists and violists educated in the former USSR (or of teachers coming from that school), giving lectures and offering concerts everywhere. We can also recognize generations of artists-teachers trained in the USA, in Latin American and European countries, where the methodological work of the modern Russian-Soviet school can be identified in their own geographical areas.

The pedagogical and methodological principles of the teaching of the violin and viola of this school have been consistent with the world progress, with the passage from modernity to an inclusive and socialized culture in a consciously empowered educational context that led to the expansion in all branches of knowledge related to pedagogy; among them the construction and improvement of musical instruments and their sonorous ideals (development of luthiery), the rise of compositional creation and the scientific study of the methodological components that regulate the teaching-learning processes, the mastery of technique and interpretative mastery, and the development of a new way of teaching and learning.

In Cuba, particularly, this school was established in the seventies, when Soviet specialists from all branches of knowledge began to arrive there. In the case of music, many teachers were working to train several generations of musicians, and even achieved the creation of the first University of the Arts, initially called the Higher Institute of Arts, in 1976. In their eagerness to affirm a socialist pedagogical system, students and teachers took training courses in the former USSR. Consequently, the practice and methodology of teaching achieved a significant development in the Cuban pedagogical context.

A unique place in this process is occupied by Evelio Agustín Tieles Ferrer (1941), Cuban violinist, teacher of generations and visionary of national and international artistic education. Trained in different schools, he achieved his academic and interpretative mastery at the Tchaikovsky Conservatory in Moscow, in the golden age of pedagogical teaching and violin interpretation. With a vast career as a performer and educator, Evelio Tieles has recently presented his book "Sentir-Pensar: El violín y yo", a trascendental work from which we have taken a fragment to base this paper on, and which reaffirms the presence of the Russian-Soviet school in the formation of string instrumentalists in Cuba (the violin, the viola and the cello).

This research focuses on one of the many aspects that the master addresses in his book, which is, from his experience and thorough research analysis, the study and tracking of various schools, teaching methodologies and history of violin performance and its socio-historical and cultural contextualization, so as a main objective, this work focuses on highlighting the overlapping aspects between the Russian-Soviet school and the methodological principles of teaching-learning the violin in Cuba, exposed in the book Sentir-Pensar: The Violin and I, written by maestro Evelio Tieles.

The book is not only the result of the experience of one who has been a national advisor for stringed instruments in Cuba, an excellent concert performer and trainer of several generations of Cuban performers and pedagogues, but also the effect of development processes in the field of music education in the country.

This seems to be the first book published in Cuba that deals in a singular way with these topics on the violin (both from the historical analysis of its evolution and from the methodological aspects corresponding to the particularities of teaching from basic to higher levels). Although different in their conception, we also recognize as antecedents the writings of the violinist and pedagogue Oscar Carreras (1944-1999); his works: "Apuntes sobre el arte violinístico" (1985) and "Metodología de la enseñanza del violín en el nivel elemental" (1990) have been indispensable bibliography in the classes of methodology and history of the violin, as well as school referents of the Russian-Cuban pedagogy.

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The Russian-Soviet school and violin teaching

Generations of Russian artists (trained during and after the Soviet period) are developing their professional life outside Russia. This is evidence of the existence of a propagation of philosophical thought, aesthetics and humanism of violinistic interpretative art, which had its peak since the middle of the 20th century.

Consistent with the brilliant careers of great performers, there was an equally novel pedagogical and methodological refinement about teaching the instrument. As violinists Semyon and Gary Ronkin mention "The Soviet years were decades in which violin performance and composition flourished to a degree rarely encountered in the history of music." (Ronkin & Ronkin, 2005, p. vii) Generations of violinists from the former republics assumed a fundamental role in mass culture; although many were unknown internationally, those recognized beyond territorial borders such as David Oistraj, Leonid Kogan, Nathan Milstein, Boris Goldstein, Elizaveta Gilels, Nelli Shkolnikova, and others, enjoyed such fame that today the Russian-Soviet violin school is recorded as one of the most transcendent worldwide.

The historical-formative process of the recognized violin schools created through the centuries, are linked, in the first place, to the social demands, to the impulse and evolution of the instruments and their makers, to the composers and/or performers, to the historical-cultural evolution, the creation and rise of different types of ensembles, stages and of course, both to the pedagogy and the performer who, as Tieles asserts, ultimately demands with his interpretation greater quality and development.

It is known that the Soviet violin school has its direct antecedent in the Russian school existing before 1917, with the St. Petersburg Conservatory (Henryk Wieniawski, Leopold Auer); the Moscow Conservatory (Ferdinand Laub and Jan Hřímalý or Ivan Grzhimali), and the Odessa school (Pyotr Stoliarsky).

The Moscow Conservatory (1866), inaugurated four years after the St. Petersburg Conservatory was something secondary in the Russian cultural life, a few years later, in the seventies, it became one of the main artistic centers of Moscow due to the weight that its professorship had in the Russian musical and cultural life (Keldis, 1966, p. 29).

We know that there are characteristics that define methods, methodologies, schools or teachers, which we will not analyze because it is not our objective. However, defining the school would help in the understanding of the aspects that will be mentioned here.

The term "school" comes from the remote times of ancient Greece, its genesis was related to leisure or free time (third moment of the Greek day of the classical period) in which, man was dedicated to cultivate the spirit, concatenated with learning. Generally, these moments were guided by relevant figures of philosophy or by a leader of recognized prestige (Veschi, 2019). Currently, its role as an institution is evident, "...framed in two directions one to form and the other to prepare, to achieve the integral formation of man for the society in which he is going to develop" (Tocora and García, 2018, p. 2).

We conceive here the school as a didactic model; that is, a representation that particularizes a teaching, whose methodological procedure evidences, fundamentally, principles and methods characteristic of the environment in which it arises and develops; in this case, we refer to a group of violinists performers or pedagogues, who follow methodological principles characteristic of a people or nationality, which distinguishes more precisely a particular school. For Tieles the School as a philosophical category: "...is the method and concept that develops Sentimentality [...]. This category is expressed and summarized in three abstractions: "what", "how" and "in which way" (Tieles, 2022, p. 46).

The methodology of teaching for stringed instruments, as well as the methods created by the master-performers have existed in all times; suffice it to mention some such as those of the violinists Giuseppe Tartini (1692-1770) or Leopold Mozart (1719-1787), father of the musical genius, composer and also violinist Wolfgang Amadeus. The evidence preserved today shows an unquestionable evolutionary path, however, beyond the individual and the non-existence of a standardized method, there are features that define the most widespread school of teaching: the Soviet Violin School.

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> The Soviet School turned violin technique into an openly taught, systematized, logically organized and easy to understand subject. The "tricks" were shown, explained and transmitted to students in a scientific manner. The methods were incorporated into courses, texts and a rigorous curriculum. This is not to say that violin instruction was rigid or dogmatic, pedantic or fixed. On the contrary, it was flexible and malleable, analytical and adaptive. Had that not been the case, the Soviet Violin School would have atrophied or would not have reached the heights it did. Had the School not corrected the defects, its own and those of others it observed along the way, it would not have produced successive generations of soloists, each as great as its master, but marked by individual talent. (Ronkin & Ronkin, 2005, pp. vii-viii).

Master Evelio Tieles. Knowledge and practice

It is not by chance that in the book Sentir-Pensar: El violín y yo, Tieles is grateful for the publication of his 'vital experience'. If we talk about violin teaching in Cuba, the first of many names is that of violinist, performer, pedagogue and cultural promoter Evelio A. Tieles Ferrer, a prodigious teacher and performer who, in addition, trained, researched and got to know first-hand important schools, teachers and world-famous performers. To this is added his own intellectual development which becomes his vital experience or the accumulation of knowledge that he transmits to his disciples throughout his life in music teaching and which is now treasured in this book.

Evelio Tieles studied in Paris with the renowned violinists Jacques Thibaud (1880-1953) and René Benedetti (1901-1975), as well as at the Tchaikovsky Conservatory in Moscow under the leadership of David (1908-1974) and Igor Oistraj (1931-2021). Also significant in his career have been the maestros Henryk Szering (1918-1988) and Eduardo Hernández Asiaín (1911-2010), all of them representatives of important and different schools of the 20th century.

Due to his outstanding interpretative quality, several composers have dedicated to Tieles some works for violin in different formats. It is worth mentioning among them Alfredo Diez Nieto (1918-2021), José Ardévol (1911-1981), Harold Gramatges (1918-2008), Roberto Varela (1938), Nilo Rodríguez (1921-1997), Xavier Benguerel (1931-2017), Ramón Barce (1928-2008), Salvador Pueyo (1935) or Father Albino Varotti (1925-2018); however, the gratitude of the maestro goes, first and for ever to his parents, who initiated him on the path of music and gave him all the cultural and educational support to face the obstacles imposed in the formative process.

With the creation of the National School of Arts in the 1960s in Cuba, and the activation of an inclusive educational system (especially in the proliferation of children's schools as a seedbed for artistic education), the maestro dedicated his entire life to the promotion and organization of the teaching of stringed instruments. Also as a soloist and concert performer he has given countless concerts in Cuba and other countries in North America, Latin America, Europe and the Middle East. It is worth mentioning the violin and piano duo with his brother, the important pedagogue and interpreter Cecilio Tieles, with whom he performs on a recurrent basis in different artistic scenarios.

Today, the maestro continues to be active, sharing his experience in Cuba and Spain as a teacher, violinist and concert performer. For his meritorious artistic-cultural work he has received several distinctions and was also a finalist awarded with a Diploma of Honor in the H. Wieniawski Competition, in Poznañ, Poland (1962); P. I. Tchaikovsky, in Moscow, ex-USSR (1966) and Honorable Mention in the Paganini Competition, Italy (1964).

"Sentir, pensar, el violín y yo", (CIDMUC 2022), in addition to its intrinsic values, takes as its main axis its vision of the apostle José Martí and the concept of 'sentimentality' from which it appropriates, which allows to consider it as a life story:

> Sentimentality: my word: that in the observation of nature I have believed necessary and I have used, with this own force of invention and own sense that its individual intelligence gives -in all its rational operations- to the individual. (Centro de Estudios Martianos, 2011, p. 49).

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> Marti's thought is poetically assumed from the pedagogical vision of the teacher who, through his musical instrument: the violin -that from where sentimentality overflows- assumes the art of expressing the whole and the parts, the mystical gears of the violin and the bow in the production of sound and musical interpretation.
>
> My years of research and professional development, together with my role as an educator, .have allowed me to synthesize and understand in a coherent and straightforward way - though not simple- how to master two instruments and two processes simultaneously imbricated in one: the bow and the violin; uniting the art of Expressing/Feeling-Thinking with the physical, the tension-distension that is, in reality, articulation-distension. That whole -the violin and the bow- that emulsifies in the Sentimentality. (Tieles, 2022, pág. 9)

With great originality and humility, Tieles focuses his professional life (finally, his life) on feeling and thinking through the violin and the exceptionality of Marti's thought as a cosmopolitan vision of a cultural universe inherent to human beings. "After years of gathering knowledge and experiences of how to face and refine my reality to be a better violin player, I can affirm that being a musician is a poetic and philosophical theoretical abstraction, a spiritual reality" (Tieles, 2022, p. 29). Written in a colloquial language and full of knowledge, the work expresses the being in its complexity, the intellect, the reception-processing and resolution of conflicts and the wisdom of a lifetime of teachings and learning.

Evelio Tieles in his work as an educator and performer has been bequeathing us the millenary culture through the oldest known method: oral experience, teaching-learning in daily artistic practice, art in its primacy as a social function or, in his words "...the concept of School as a whole..." (Tieles, 2022, p. 9). Now, in this autobiographical reflection, we can extract points that are determinant for the formation of the instrumentalist, providing a general methodology of the cognitive process, which is why we consider that the teacher Tieles has developed and shaped a school of teaching-learning of the violin in Cuba. The realization of his book "Sentir-Pensar: el violín y yo" (Feeling-Thinking: the violin and I), decorates him as a researcher and referent of the history of the violin. The theme is not structured in the technical or artistic, research or methodological, theory or history, but works on the sentimentality, that is to say, that expression that finally produces the enjoyment of playing an instrument as human as the violin.

Methodological principles of the Russian-Soviet school present in violin teaching in Cuba under the guidance of pedagogue Evelio Tieles

"Sentir, pensar: el violín y yo", is a Cuban study that dialectically projects the history, evolution and methodology of the universal teaching of the violin through the centuries. Tieles has known how to synthesize the developed topics with a critical spirit, which has allowed him to expose personalized and novel conclusions on the historiography and the teaching-learning process of the violin worldwide, highlighting the experience of the Russian-Soviet-Russian school. In this way, the recognition of this school exemplified in the iconic figure of the violinist and pedagogue David Oistraj is patented:

> The paradigm of technical excellence in this 21st century is David Oistraj. [...] he creates with his handling of the bow and his right limb a world of plasticity and sonorous beauty with a refined technique. He played with Russian school in a "chameleonic" way: it seemed that he used the French school until I understood that the first articulation was a dynamic reference, not a fulcrum. Hence his physical harmony, which makes possible the emission of his expressive sound, refined in his telling of the music, transmitting that sensitive world that needs an other. His mastery is governed by principles and criteria where materiality [...] allows him to maintain the necessary and indispensable poise and stability for the physical and biodynamic expressive balance, eliminating movements that are incorrect because they are unnecessary and hindering. So plastic is his action that we do not realize that he is the player who holds the head of the violin the highest (Tieles, 2022, p. 2).

From the point of view of the master Tieles we will expose some reflections on basic principles that are instituted in this experience and that have been present in the methodology of violin teaching and in the formative practice of Cuban violinists.

For a reference to the Soviet school we have also considered the work of Semyon & Gary Ronkin, "Technical Fundamentals of the Soviet Masters. A violinist handbook". Both, based in New York and trained by M. Goldstein and M. Glezarova respectively, enriched the study with the information of pedagogues such as D. Oistrakh, Yuri Yankelevich, Eugenia Chugaeva and M. Glezarova.

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The methodological aspects to consider have been coincident with the texts researched and put into practice also by the authors of this work trained under this vision. All of them are moments of reflection contained in the research of E. Tieles.

As it is known, violin teaching begins at primary levels, so the first aspect points to the initial training of children and the recognition of the role of the family nucleus in the intellectual development of the young violinist.

The works emphasize the importance of the massiveness and socialization of the art, and the priority of the selection of talent in children. The methodological basis on which a good school is founded is based on the support of the family with the surrounding cultural experiences. Semyon and Gary Ronkin, in their foundation of the Soviet school, acknowledge the Russian tradition as an antecedent and continuity, recalling that Abram Yampolsky (1890-1956)

> … established the Central Music School in Moscow in the 1930s. This school, intended for the most musically gifted children, was the model for a number of similar youth conservatories throughout the Soviet Union (Stoliarsky's in Odessa was one of them). They offered free tuition, along with room and board for out-of-town students. Regular academic studies continued while the children prepared for professional careers in music. [...] such schools brought Soviet musical pedagogy to an extremely large number of talented young people, and the best teachers and exemplars were recruited to instruct them. This is an integral part of the Soviet Violin School and its outreach to all generations. (Ronkin & Ronkin, 2005, p. 4)

Taking care of children from the beginning with adequate methodological procedures includes numerous aspects that we do not detail in this work since it would exceed the proposed limits and were already defined in the referenced research; instead, we will highlight those aspects that the teacher Tieles reflects on his own pedagogical experiences, and that are coincident points of the Russian-Soviet school applied in the teaching of the violin in Cuba.

At a primary level of musical education it is coincident the importance of paying attention to the selection of the size of the instrument and its quality, as well as the placement of the violin, hands and fingers, the articulation and movement of the fingers, wrists, elbows, arms and forearms (separately and as a whole), including attention to psychic and emotional phenomena, intonation (tuning), changes of positions, the principles of vibrato, basic bow strokes, expressive and dynamic movements, double notes, chords, etc. , considering the whole and the parts as a changing process as the pupil grows both physically and in his or her intellectual development and maturity.

Tieles stresses the importance of one of these aspects present in the entire growth process:

> We must bear in mind that from the very moment we initiate in art the little being we teach, [...] [we develop] two processes in one: one artistic-intellectual and the other, artistic-physical. The link that is an organic condition in each and between the two is the expressive sound (Tieles, 2022, p. 94).)

The Soviet school recognizes that a good instrument looks and sounds good, which arouses the interest of the child who feels pleasure with his new toy: "With a good instrument, he will learn to recognize good quality sound and will develop an aesthetic attitude towards sound in general" (Ronkin & Ronkin, 2005, p. 8).

Another common point - much debated today - is the need not to rush children by using stiff pads, which does not mean playing without a pad at all. Although there may be exceptional cases, in general it is recommended that children use simple attachments that allow them to accommodate the instrument by naturally filling the empty space between the violin and the shoulder area: "...it is better to suggest the use of a handmade cushion that is modified as they grow, than a contraption that means something static and cannot be adapted" (Tieles, 2022, p. 97).

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Tieles shares the recommendation of L. Auer in his book "Violin Playing as I Teach it" when he states that "When the violin is placed on the clavicle, it must be placed on the basis of the criterion that the head of the instrument should be at the level of the nose" (Tieles, 2022, p. 98). This is how an appropriate selection of the violin, the bow, and all its accessories (chinrest, cushion, tuners, etc.), fulfills the purpose of offering adequate comfort, avoiding bad postures, fatigue or pains that may disinterest or discomfort the little beginners in a long but exceptional musical career.

The position of the violin, fingers and hands can be seen in detail in all the mentioned works, however, it is important to consider the necessary flexibility to adapt the convenient posture. Many factors influence this, for example, the physical characteristics (length and width of the fingers, of the palm of the hand, capacity of extensions), the string on which it is played, the different positions, the artistic demands of the technical passages, the wide or narrow intervals, the chords, the treatment of the speed of the bow in relation to the nuance, pressure of the bristle to the string, place of the bow and color or timbre that is required etc., all this implies the existence of principles which, while standardizing a way of playing, provide at the same time the conscious freedom of the postural process.

> The act of playing the instrument implies the development of flexibility -that which can be easily bent without breaking- and elasticity -that which can be stretched and deformed recovering its shape when the force that alters it ceases-. These two concepts are implicit in children's play.. (Tieles, 2022, pág. 95)

The role of the teacher at this time is fundamental for the development of good habits in what we know as muscle memory, in such a way that it facilitates the development of skills and basic learning with a view to professionalization without abrupt changes in techniques or ways of doing things:

> The Russian-Soviet school, thanks to its unparalleled international reputation, has had a tremendous influence on schools around the world. The emulation of this school is evident not only in the general form of modern playing, but also in the position that allows for large-scale playing with a high degree of expression and technical stability.(Ronkin & Ronkin, 2005, p. 15)

Body position is an important aspect for expressive freedom and technical mastery. To hold the violin it is necessary to observe the support between the clavicle, the left shoulder and the head, plus the base of the index finger of the left hand. According to the Ronkin Moscow school, in the first positions the violin "is held in place by the weight of the head grasping the front part of the chin and taking advantage of its concave shape, and not simply by pressing it" (p. 15)).

To maintain overall balance and freedom of the body, the feet "are placed shoulder-width apart for greater stability of the body during the active movement of the arch" (p. 15). More precisely, Tieles states:

> We should never lean on our heels, because it produces a false sense of security. You are simply off balance. This can be easily verified if someone pushes you lightly in the chest. If you lean on your heels they move you with absolute ease, if you lean on your metatarsals you neutralize that pressure. (Tieles, 2022, p. 99)

For our part, we suggest to the students the use of some heel in the shoes that are used to study or play since it helps us to rest and distribute the weight compensating the lack of a natural position.

The creation of healthy habits of discipline and control in individual study allows the mastery of physical and mechanical movements avoiding injuries. When the necessary balance between the physical-postural-technical work and the interpretative one does not exist, we put at risk our health and the quality of the interpretation.

> The word habit implies forging and incorporating in a conscious way -through hours of study- the organic and necessary physical-artistic procedures, which are integrated as a "second nature" through the "creative routine" to the personality of the co-creator of the work. When we repeat consciously seeking to do it well, what you do wrong will inevitably begin to mutate until victory is achieved, if you have a spirit of sacrifice and culture. (Tieles, 2022, p. 37)

In the quest for mastery, the learning process is essential: "one learns, one is not taught" (p. 14). Values such as willingness, endurance, desire and emotional control are basic skills that are assessed in the student.

The focus and clarity of ideas and objectives in individual study and the appropriate use of methods to achieve them facilitate the result without great emotional wear and tear: "One must pursue a concrete and tangible result to overcome that which one wants to overcome and master. This progress must be progressive and palpable..." (Tieles, 2022, p. 14). The planning of the class and the adequate design of the objectives to generate good habits reaffirm the need for the correct application of a methodology of teaching:

> … It is important for the teacher to practice as a rule that the difficulties presented by the students are solved in class. On the other hand, the learner cannot simply apply the teacher's prescription and not solve the problem. He or she must ultimately solve it with his or her own resources. It is a two-way street. (Tieles, 2022, p. 35)

The individualized teaching of the instrument implies a personalized treatment with the student who is a participant in the creative activity. By nature, children are curious about what is new and unknown; the teacher must take advantage of these opportunities to give all the necessary information and awaken emotions. "It is not enough to teach the right thing, since we are instructing people who have different personalities and, therefore, there are different ways of approaching what is being explained to them" (Tieles, 2022, p. 23).

A musician is not formed by stripping him/her of the pleasure of feeling and wanting to express him/herself, but neither is a good school the one that lets you play at whim without the use of reasoning, the hard and patient work of polishing the technique and the achievement of expressive freedom from the true stylistic-historical-cultural and life knowledge of the composer, as well as the learning of the traditions acquired from the great masters of interpretation who respect the principle of not emphasizing themselves, but the essence of the work and the composer they interpret, or in Tieles' words, ".... the will to express professionally what you feel in order to convey to the listener the (your) musical discourse..." "...based on an absolute control that can only be thought-sense from the artistic" (Tieles, 2022, p. 12).

In addition to these and other criteria, Tieles concludes by providing personal pedagogical insights:

> The Russian school is often linked to the great sound; however, even so, I would argue that there is a more powerful cause. The Russian position is established as standard because, by changing the index finger, the positional-dynamic reference is not a fulcrum; this new reference, by moving closer to the right knuckle, allows the wrist greater mobility, keeping it low on the heel. This facilitates greater mastery of the heel itself and the lower third of the bow. (pg. 89)

From the methodology, the dual reasoning of the instrument that he makes in his book: the violin and the bow as two components or two instruments, brings awareness to the conception of teaching, learning and interpretation.

In the history of music since ancient times, stringed instruments have occupied a unique place comparable to the voice of the singer, that with which language is produced and intonations are transmitted that express emotions and communicate the universe. The technique of producing sound through the vibration of the strings (vowels) is the example most used by pedagogues for the understanding of the production of sound and its projection with quality from the handling of the bow. But in a brilliant way, Tieles has brought us a new vision by highlighting the instrumental duality of the bow and the violin as a dialectic concept.

In the balance of an acquired experience and the reflection and observation of other great interpreters and teachers, Tieles defines "...three moments-dimensions that make up three even categories -interrelated, opposed and at the same time complementary- strongly connected to each other: Rhythm-Tempo; Sound-Affinity; Action-Distension" (p. 25); all of them key moments in the approach to the technique of both hands that have a determining incidence on the interpretative quality and sound projection. With these three moments the master unveils his "tricks" of so much sonorous beauty produced with the violin.

Definitely, Evelio takes us through the tortuous path of truth, of encounters and misunderstandings and at the end, like the great Yoda, he shows us the way, which in synthesis we will have to travel with the wisdom of the experience of others.

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> … teaching the violin is a simple, conscious and refined volitional act and, because it is obvious, we do not realize that it is problematic, tangled and thorny. It is a process that exists organically in any human action. This is how things happen in nature, in society, in music, and thus in the violin. (p. 36)

"Sentir-Pensar el violín y yo", is a methodological text for every instrumentalist, teacher and/or performer of string instruments.

Methodology

For the development of this research, a result of the project "Interdisciplinarity of music teaching, performance and research", the analytical-synthetic methods were combined; document analysis and key informant interviews. The following categories were used as units of analysis to obtain the information: violin-viola teaching method, methodological principles, instrumentalist training, which made it possible to identify methodological aspects of the teaching-learning process of violin and viola teaching in Cuba based on the Russian-Soviet school.

Results

The Russian-Soviet school formed in a historical context and moment bequeathed to violin teaching in Cuba aspects of methodological character that today continue being part of the theoretical-practical foundation for teaching.

The methodology of teaching string instruments is based on the results of research and on the combined experience of the instrumentalist and the teacher.

Among the methodological principles bequeathed to us by the Russian-Soviet school we can distinguish: the beginning of violin teaching from the primary levels that indicate particular methods to take care of the infant and to procure the intellectual and physical development; a flexible teaching process taking into account the physical characteristics of the student; the preponderant role of the teacher in the orientation, the control of the exercise, the discipline and the development of study habits; the differentiated treatment according to the context and the particularities of the student's development.

Conclusions

"Sentir-pensar: el violín y yo" in itself, is a collection of thoughts, proposals, poetry, philosophy and wisdom; an awakening of consciousness to create an interpretative spirituality, which starts from the settlement of the physical body stepping on the ground (the reality and hardness of the process) and the soul vibrating in the sound space (the result). In its pages he offers to the new generations of musicians and fundamentally to violin and viola teachers, a wealth of experiences, knowledge and history of great value.

The author reflects and highlights those methodological principles which, based on the Russian-Soviet school, constitute the pillars for the teaching of the violin and viola from the earliest ages. Among them, aspects of a cognitive, affective and process management nature stand out, such as: the significance of the differentiated, personalized, affective and humanistic character of this process; the gradual introduction of accessories or technical equipment according to the apprentice's stage of development; the adoption of an adequate position to avoid deformations that affect the physical nature; discipline, rigor and responsibility when training, as well as the care of planning and the adequate design of the teaching activity; and, the importance of the teaching of the violin and viola.

As a conclusion, he exposes the need to contextualize the teaching process, emphasizing the stylistic-historical-cultural knowledge and the composer's life, and bearing in mind the traditions that the masters of interpretation have bequeathed us.

It shows the methodological conception for violin teaching in Cuba.

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Study for the validation of an instrument for foreign language learning

Estudio para la validación de instrumento para el aprendizaje de lengua extranjera

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Abstract

The purpose of instrument validation is to guarantee precision and validity of the collected data obtained from scientific research, survey and evaluations. The purpose of the present work was the making and validation of a survey to evaluate the level of the receptive and communicative skills of the English language acquired in the pupils at the Escuela Superior de Tepeji del Rio, in the administration program to be more specific. For this purpose, qualitative methodology of the Delphi technique was used. This process is intended to obtain a consensus among a group of experts on a specific topic and to validate the internal consistency, the calculation of the Cronbach alfa coeffient was used in a sample of 61. The alpha coefficient value closer to 1 indicates a greater internal consistency among the ítems. Out of the results through the Delphi technique, feedback and consensus among the ones who checked and evaluated the components was obtained. The calculated Cronbach's alpha coefficient resulted in (0.83), which corroborates the reliability and validity of the instrument. The contribution is the instrument to be used inside the institution with the intention of determining the potential in the development of the communicative skills of the English language.

Validation, Qualitative, Methodology.

Resumen

La validación de instrumentos es garantizar precisión y la validez de los datos recopilados en investigaciones científicas, encuestas y evaluaciones. El objetivo del presente trabajo fue la elaboración y validación de un cuestionario para evaluar tanto el nivel de las habilidades adquiridas como receptivas y comunicativas del idioma inglés en el alumnado de la Escuela Superior Tepeji del Rio en específico en el programa de Licenciatura en Administración. para tal fin se aplicó la metodología cualitativa de técnica Delphi proceso que busca obtener consenso a partir de un grupo de expertos en un tema específico y para validar la consistencia interna se utilizó el cálculo del coeficiente alfa de Cronbach a una muestra de 61. El valor del coeficiente alfa más cercano a 1 indica una mayor consistencia interna entre los ítems. De los resultados a través de Delphi se obtuvo retroalimentación y consenso de quienes revisaron y evaluaron los componentes. El coeficiente de alfa de Cronbach calculado resultó de (0.83), lo cual corrobora la confiabilidad y validez del instrumento. La contribución es que el instrumento sea utilizado dentro de la institución con el fin de determinar el potencial en el desarrollo de las habilidades comunicativas del idioma en estudio.

Validación, Cualitativo, Metodología

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Introduction

Globally, foreign language learning has expanded dynamically in recent decades. This phenomenon has favored the union of key aspects in educational institutions, such as theoretical-practical training, aspects of cognition, receptive and communicative skills, comprehensive training and commitment Rodriguez (2014). In the words of the aforementioned author, he reflects on the basic aspects of formative models of universities focused on the line of promoting practice in contexts of coexistence and work, situations oriented to social, business and dialogue training.

In Mexico, the teaching-learning of the English language begins in basic education up to the university level, the objective is to contribute to the integral formation of students to face scientific, technological and social challenges that the current context demands.

At the Universidad Autónoma del Estado de Hidalgo, the results of the acquisition of a second language, in this case English, is part of the university curriculum, the quality of the programs and their relationship with internationalization and student mobility. In addition, in Mexico, the Inter-institutional Committee for the Evaluation of Higher Education (CIEES) requires universities to have instruments that measure the level of language proficiency in order to fulfill the objectives of the programs.

In this sense, research on second language learning is broad and diverse in its approaches, some scholars such as (Ferran and Guinot, 2012) propose methodological strategies, while others approach it from a pedagogical perspective Cecchi (2006) and still others consider it as programs that may well be assisted by technology. However, the different points of attention, all have in common, the way of acquiring the language learning given sense in terms of practice and use in their professional training.

Recent research (Charline Rouffeta, Beuningena, & Graaff, 2023) has found that teaching activities and classroom assignments are predominantly based on grammatical knowledge of the language and out-of-context vocabulary and to a much lesser extent on reading and comprehension skills. In addition, external factors such as the teaching and assessment materials available as well as conceptual factors such as teachers' conception of language learning have been identified as contributing to the poor alignment between what is expected to be achieved in the classroom and the results obtained. It should be noted that assessments in particular seem to have a negative effect on the implementation of communicative language teaching.

The didactic richness, as indicated by Folgueiras and Martínez (2009), lies in the fact that the student develops competences linked to social and ethical aspects; based on meaningful, collaborative and dialogic learning. In the present study, the teaching cycle is considered to be a methodology that allows the student to acquire the language in a practical way, by developing the stages of: social-cultural immersion, acquisition of grammatical structure and implementation in various contexts, the meaningful use of the language; this cycle recovers these formative elements by stimulating personal development, changes in the curricular programs that promote it, and improvements in the university environment that receives the service.

To this end, through the application of the teaching cycle, the four grammatical skills of English (reading comprehension, oral expression, listening, and reading and writing) are developed. The mastery of these skills is a priority, as reflected in the academic programs, since students must communicate professionally in English at the end of their studies, using the four skills in their entirety.

From this perspective, this article reviews university research, setting as an objective the elaboration and validation of a questionnaire to evaluate the level of acquired skills as well as receptive and communicative skills in the students of the Escuela Superior Tepeji del Rio, specifically in the Bachelor's degree program in Administration from semesters 1 to 6, with the intention of determining the areas of opportunity within the teaching cycle and the resources available to the students in their learning process.

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To achieve this goal, the Cronbach's Alpha test was applied, which, unlike other techniques, allows the measurement of internal consistency or reliability of instruments that use Likert scales and quantifies how well a set of items measures a unique and unidimensional aspect of individuals based on the application of a questionnaire.

The structure of the article integrates information compiled from the literature divided into summary, introduction, theoretical foundation, methodology, results, conclusions and references. Sections in which the theoretical support that shows the progress and use of teaching techniques and their results are presented, as well as the aspects to be improved within this practice; up to the clear and concise description of the steps executed for the validation of the research instrument. In addition, the results section in which the findings of the validation of the instrument are presented and finally, the conclusions.

Theoretical foundation

Background

Dialogic is the science that analyzes and studies the form or structure of social communication generated in the interaction between human beings through the use of natural language.

Factors related to the teaching and learning of English as a second language have been investigated from various perspectives over time. In recent decades, many researchers have tried to determine the aspects and causes that influence the acquisition of a second language, regardless of geographic location or time. Such is the case of Thompson (2019) who asserts that around the year 2019 high school teachers in Japan explored through a survey applied to 141 students the efficacy beliefs concerning English learning and teaching, finding that in a learning context the individuals involved become both influencers and influenced, such a relationship can be considered one of reciprocity. This finding allows us to point out that within the teaching-learning process that is developed and implemented in the classroom, the active participation of the students is fundamental, as is the preparation of both the teacher and the class. It is also interesting to address the discrepancy that may exist between teaching models versus what is actually applied in the classroom.

One of the most significant debates in the field of English language teaching is determining how best to approach it and how best to have the approach with the student body to ensure interest, retention and practice of what is discussed in class. However, this continues to be a question not only in education in Mexico but also in the world.

According to a study conducted by Rachayon (2019) at Thammasat University in Thailand, as a result of the growth of medical tourism, it is essential that students have a good command of oral competence since these nurses in training are the ones who will play the role of mediators between patients and doctors. That is why in an effort to provide students with the necessary tools to overcome this challenge (faced by students in various educational institutions around the world) Rachayon (2019) suggests the implementation of Task Based Instruction (authentic and meaningful language for problem solving) by integrating three different learning approaches: Teaching language based on tasks or activities, inverted learning and the application and use of digital games for the development of a second language, obtaining favorable results in the learning of students, since according to the evaluations applied to these groups before and after the implementation of this proposal the results were statistically higher and significant after having worked under this approach, thus proving that this method allows to achieve the proposed communicative objectives.

It is worth mentioning that the objective of this research project is to achieve a significant advance in the academic performance of the subject of English with students of the bachelor's degree in business administration, who like the nursing students of Thailand will act as mediators and interpreters between the needs of the company or organization and a changing and globalized world, for example, negotiations with people or organizations from different parts of the world.

Not to mention that the best way to approach and achieve understanding of the syllabus taught in this subject is through playful activities that allow students to learn without even realizing that they are doing so in a fluid and natural environment.

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However, the acquisition of the English language is not only nourished by the use of online devices or programs, which, although it is true, reinforce the knowledge you already have, having a teacher with whom you can have personalized practice is undoubtedly the best option. Although, within these lessons, the moderation of the mother tongue of each participant must be taken into account in order to achieve the best results.

Such is the case of Adriosh (2019) who in a study conducted in three universities in Libya showed that through the "EFL (English as a Foreign Language) teachers code-switch" (Language switch (mother tongue to English - English to mother tongue) of teachers of English as a foreign language) greatly favors the student's understanding of the topics to be developed and also allows the identification of similarities between language and mother tongue and the language in question. Not to mention that it facilitates the teaching-learning process. The use of the mother tongue at specific moments during the acquisition of another language is fundamental for the student to understand the relationship between what he/she is learning and what he/she already knows, remembering also that languages have a very close relationship with each other.

Adriosh (2019) shares through this study that the source language used in his research was Arabic and it was only used for comprehension functions such as: Clarification, Repetition, Recapitulation, and Socialization. These correspond to key moments of the class in which feedback is needed to ensure that students have understood what they have to do and how. Without omitting to mention that it is something that the student prefers and appreciates because the more interaction they have with the language they are learning, the faster they will master the content and of course it represents for them a greater opportunity to exercise what they have acquired in their lessons and motivates students to continue learning.

All these recent developments in the field of teaching-learning have rekindled the interest in providing not only the students with what they require to make their language learning an unforgettable experience but also the teachers so that through understanding this process they can identify and work on areas of opportunity, in order to offer the students lessons of quality and significance.

In one of his studies on teaching how to teach developed in Nepal, Reddy (2019) states that providing teachers with opportunities to study their own teaching and that of their peers marks a before and after in their training and practice as teachers. As these small teaching practices are given in considerably reduced groups ranging from 5 to 10 students maximum and with a duration of 5 to 20 minutes, they allow them to be analyzed, discussed and fed back later, thus favoring the teacher's development. It should not be forgotten that microteaching greatly improves pedagogical skills and allows to reaffirm the positive points that the teacher has and to increase his confidence and competences.

Over the past decades, many researchers have tried to determine the factors that determine or play a crucial role in second language acquisition. That is why Rahman (2019) in his study about the implications, problems and solutions of English language teaching in Bangladesh points out that the mastery of this language results in benefits not only for the students but also for the geographical area in which it is located since it also impacts economic growth and workforce development. Of course, within this analysis, it was observed that in order to enhance the teaching of the language in this country, the curriculum, methodology, textbooks and evaluation criteria were formulated. These actions are essential to ensure that the new generations can keep pace with the new generations and that both the information and the form of access to it meet the needs of the student and that the contents found in their materials are relevant and that they can recognize themselves in them as much as possible, otherwise those involved will have the perception of not being taken into account in the process.

On the other hand, recent evidence on the subject suggests that beyond the syllabus that is worked on in class, practice in real contexts and situations in which students can exercise what they have acquired in class is highly recommended. According to Hsieh (2019) in his study "Undergraduates' Out-Of-Class Learning: Exploring EFL Students' Autonomous Learning Behaviors and Their Usage of Resources, conducted in China, out-of-class practice maximizes and constitutes one of the most important pillars in learner development and promotes autonomous learning both in the classroom and in their personal lives. Of course, there is a huge difference in English achievement between those students who practice and implement English in their daily lives and those who do not.

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It is important to emphasize that the facilities that each higher education institution offers will play in favor or against the learning of its students. That is why Hsieh (2019) within this research also considers the resources of the university learning center.

In terms of the relevance of the studies of (Hsieh, Rahman & Ginaya, 2019) which take the contents and materials available for the learning and consolidation of the English language, to argue that for the student to establish good communication in a second language it is necessary to make use of the inductive method with authentic materials specifically tailored to the needs of their students. Of course, the benefits offered to the students are countless, since they acquire the language in a natural way by reinforcing what they work in the classroom with the contexts that surround them, which provides a competitive strategy for the institution.

In this order of ideas, there is the similarity identified by (Reddy and Cirocki, 2019) who conducted a study focused on the reflective practice of teaching English in Indonesia. For his part Cirocki (2019) invites education professionals to take responsibility for their professional growth by making use of both individual and collective reflection with the aim of getting the best out of the process to substantially improve and maximize student learning. Not to mention, it establishes the key moments in which this process should be applied, arguing that it should take place before, during, after and beyond the lesson. It also suggests the importance of personal reflection for a successful class, which should range from planning to execution.

To this point, the contextual practice of both teaching and learning according to the vision provided by Haerazi (2019) must have a clear and specific focus that allows improving the reading comprehension and motivation of students. It is important to remember and recognize that not only communicative skills are of relevance in the learning and acquisition of a second language, since receptive skills allow the student to provide himself with the necessary information that allows him to perform a task. Not to mention that the opportunity that reading provides the student to see his or her learning contextualized is invaluable. To this end, two cycles with quite specific functions are used to improve the performance of the participants' reading skills. These cycles include: plan, actions, observations and reflections.

However, beyond the aspects of didactic resources and the curricular map that make up the guide to reach the desired level of English, the relationship between student-teacher and the feedback that exists within this interaction is a key element in the process of mastering the language. According to a study conducted in Norway by Vattøy (2020), it is concluded that a quality relationship between students and teachers is essential to achieve language acquisition in the learning process since they cannot exist without being an emotional support that can motivate or discourage the student in his learning process. Following with Vattoy (2020) when making class recordings it was appreciated that a healthy relationship between the students involved makes a difference and impacts in a potential way the student's position in terms of their feeling to learn or not to learn a language. Interestingly, even in other countries, human contact and learner perceptions are taken seriously and carry considerable weight in the acquisition of a new language.

There is evidence linking language learning with relevant and updated content, support and virtual or technological spaces that favor autonomous learning. That is why Benlahcene (2020) in his research conducted at the University Utara in Malaysia shares the high value that students give to their English courses using the approach of autonomous performance in the learning center (2019) aspect that allows the student to have greater control of their process and therefore has countless points to reinforce areas of opportunity to turn them into strengths. In this way, from representing a rather common teaching-learning technique the learner is favored with a more extensive mediation learning technique. As a result, learners have a high level of confidence in this type of online activity and generally perform well.

Like Ginaya (2019), for Lestari (2020) it is essential to achieve in students a good fluency and ability in oral expression that allows them to make known their ideas and positions on any topic instead of being abruptly silenced by the lack of vocabulary or functions that allow them to express themselves. That is why Lestari (2020) in his study called Language learning strategies of undergraduate EFL students conducted in Indonesia, puts special effort in knowing the strategies used by students in the process of English language acquisition.

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This not only provides a support system for the student but also promotes the redesign of didactic strategies that really work for them, since these ways of reacting to daily situations and solving them respond to the learning context to which they are exposed and therefore it is understood that all of them respond to their real needs.

Among its main strategies are: making inferences, the use of gestures, inventing words to be able to express the word in English, reading the text without worrying about unknown words, using words that mean the same thing when I do not remember the word I want, among others. These strategies, to mention a few, can be implemented in the daily sessions and in this way make the teaching and learning process more meaningful considering the position of the students.

There is now much evidence linking attitudes towards language learning and the resources available to them to determine how comfortable they feel during their learning process and how this directly impacts their academic performance. Orfan (2020) argues that according to research conducted at a university in Takhar, that there is no significant statistical difference between males and females, their age, mother tongue, or area of vocational study in relation to attitudes towards learning English. However, their attitude towards the learning process does vary depending on their access to the internet and their experience in learning centers. It is here where the importance of having learning and self-learning centers in the institutions that motivate students to go to them and reinforce what they already know comes back to the forefront. Students who attend lessons in these centers are more receptive, committed and responsible for their learning.

The results of the research carried out by (Unsworth and Orfan 2020) seem to suggest that for teaching to be meaningful and lasting for the learner, it must ensure that the learner enjoys the lesson, builds their own competence and confidence through multimodal tools that allow them to interact with the language, making use of metalanguage by demonstrating the use of their language assessment through facial expressions, gestures and focus and developing their emotions. What many learners would like is for this approach to reach the classroom and become part of their daily lives instead of just having isolated instances of it.

Meanwhile, Turan (2020) has shown that the inverted classroom method in the field of teaching English as a foreign language is one of the growing trends and has gained popularity since 2014 in the training of learners. Not to mention that this methodology brings remarkable benefits to the practitioners. Since in this modality, participants analyze the information of the topic to be developed in advance, class time can be dedicated exclusively to activities that involve more advanced thinking, and because it is flexible, students are responsible for their learning.

In this way, Sevimel-Sahin (2020) found that the development of intercultural communicative competence is one of the pillars for mastering a second language, stressing also that effective communication will favor interaction with other cultures and negotiation. According to this project conducted in Turkey and based on a survey of a total of 238 first and fourth year university students, there is a stronger intercultural communication competence in students of more advanced years compared to first year students, which has a close relationship with the level of English acquired by these students, since the more they master the language the more they are aware of interculturality and benefit from practicing the language in different contexts.

Those who share this perspective are Sevimel-Sahin (2020) and Qiu (2021) in expressing that they include culturalization and different linguistic contexts, proving that these environments directly and positively affect their behavior towards language learning. Thus, the study focused on determining what Chinese students preferred in terms of the characteristics of their teachers, for which, two options were integrated native or non-native teachers for teaching English. The results were revealing as the students perceived that native teachers adopted more interactive methods and diverse forms of communication. However, they were alien to interculturality. On the other hand, the non-native teachers tended to dominate the class, although the class was more intelligible to them. For this reason, the English teaching professional must find a balance between these observations in order to achieve the linguistic objectives set.

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In addition to this and regarding the concerns of some English learners regarding the use of the Lingua Franca in the lessons, particularly interesting are the results obtained by Ambele (2020) who in one of his latest research conducted in five different universities throughout southern Thailand found that students prefer to communicate with people who have an intercultural background and that in this way the participants are not forced to adopt expressions or parts of the language with which they do not identify or represent themselves. In order for this to be beneficial for those involved, she also suggests a review of the content to be developed in class that has a close relationship with the local context that allows them to learn about the varieties of English and the different accents that exist. In order to offer a learning and immersion of the participants with a real and meaningful English.

Like other authors, Numanee's (2020) contribution from the Bangladesh study is that empathy in the teaching and learning process can take the learner to the level he or she is expected to achieve. To understand this, one must understand the classroom and learning space as a dynamic platform that works back and forth, defining empathy as that force that helps not only the academic journey but also the personal social good. However, for practical purposes of this research we will call it empathy-teaching. This vital aspect of human relationships cannot be alien to the learning process. It must be recognized and applied in classroom teaching, as through empathy students are guided to be tolerant, patient and compassionate with themselves and others.

Having mentioned the most important aspects related to the interaction that exists between people in the teaching-learning process, it is also relevant to mention the virtual and technological resources that are currently available to keep us at the forefront. Most academics agree that the use of artificial intelligence (AI) as applications or software that promote greater interaction with the language in the learning process. Sun (2021) argues that by combining artificial intelligence with the teacher's knowledge, teaching is generalized and offers the participant a unique learning experience. Similarly, Alharbi (2023) suggests the development and implementation of AI to help students efficiently improve their level of English.

It is of fundamental importance for the learning of this language to receive timely feedback, which is why Han (2021) in his study conducted on university students in China, found that the discrepancy in the feedback received by students and the relationship that exists between student-teacher is something in which greater efforts should be made. It should not be forgotten that feedback should be according to the needs of the students and should make a difference in their learning once received and that it includes cognitive ability, social affective disposition and social affective ability to make the feedback effective.

Topics currently under discussion refer that the listening skill allows knowing the English language proficiency of any student. It is for this reason that the study conducted by Mulyadi, (2021) in Indonesia discusses how the receptive skill in this case Listening is combined with the productive skill for this situation, Speaking, to get the best of learning, obtaining that by offering listening practices such as audio exercises type TOEFL ITP certification student performance improves significantly, even more so if not working shoulder to shoulder with multimedia and technological materials that can well be worked in learning centers. Likewise, group discussions inherently improve their oral performance. It should be kept in mind that a grammar or vocabulary test will not always indicate what the student can produce, but rather that expressing himself or solving activities involving productive skills will show his true level of English and his production capacity.

As previously presented, possessing sufficient communication skills provides a better experience to face diverse academic and daily learning situations. It should be noted that there are some professions or occupations in which English is particularly important, such as the economic or business sectors. Thus, Sasabone (2021) in a research conducted in Makassar, details the importance of teaching the language under English conditions with specific objectives, as suggested by some other authors, he stresses the value of this methodology in the classroom. Not surprisingly, the results of this type of practice are impressive since it takes the needs of the students and transforms it into a learning process adjusted to their immediate objectives and contexts, thus motivating the practice and reinforcement of what was acquired in class.

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Of course, all of this must be put into practice emphasizing that much of the experience that the learner will gain from their interaction with the language will be through the Learning by doing methodology as demonstrated by Cosme (2018) who points out that certain characteristics must be met in order to best carry out, teaching activities, assessment and practical work, same that are adjusted to the teaching-learning cycle.

Methodology

The approach used is qualitative-quantitative, in order to determine the set of indicators.

The first step was to review the literature in order to establish common concepts and criteria. Then, by means of the Delphi technique, composed of 4 experts in the areas of pedagogy, translation and interpretation, and educational program management, a first instrument was analyzed, composed of three dimensions: 1) cognitive attitude, 2) receptive skills, and 3) communicative skills. The final version of the instrument consisted of 26 items, which can be reviewed in Annex 1.

A semi-structured interview was also applied to the professors in charge of teaching the language in the Administration program (see appendix 2).

Validation

In the validation of content, the Delphi technique was applied, a tool that has been applied in numerous areas of knowledge. This methodology is a systematic and iterative procedure integrated by experts aimed at obtaining the opinions, and if possible the consensus, of a group of experts on the subject to analyze the validity of the construct Landeta (1999).

The steps for applying the technique are presented in Table 1.

Steps to follow
1.- Selection of panel of experts
2.- Construction of the first questionnaire
3.- Pilot test of the questionnaire
4.- Questionnaire distribution
5.- Presentation of first round results
6.- Preparation of the following questionnaire
7.- Distribution of the updated questionnaire to participants
8.- Presentation of results
9.- Return to step 6 iteratively until consensus is reached.

Table 1 Steps of the Delphi method
Source: The Delphi Method

The inclusion criteria for the participants were: professional activity, place of residence, different academic background. We sought to have general profiles about English language teaching-learning in a holistic sense in order to gather different perspectives.

The questionnaire was designed based on the literature review including the methodology used at the Institution in order to analyze the effectiveness and areas of opportunity to be addressed in order to achieve the indicators of internationalization and student mobility.

As mentioned above, the elements that were submitted for consideration were (table 2).

Cognitive attitude	Refers to the intellectual process that occurs in the acquisition of language knowledge.
Receptive skills	Aspects related to language comprehension, such as reading comprehension and listening comprehension.
Communication skills	Diversification of strategies to produce the language orally or in writing.

Table 2 Dimensions for the design of the instrument
Source. Own elaboration based on literature review

These dimensions were evaluated on a Likert scale. The questionnaire was circulated in three rounds in order to obtain the degree of homogenization of the opinions; however, in the third round the results were recurrent, so it was decided to consider only two rounds.

At this point, the validity and reliability of the instrument is analyzed using the Alpha Cronbach coefficient (1990). Reliability is understood as the degree of precision offered by the measurements using the evaluation instrument, which is a way of quantifying the degree of error that affects the measurement. The criterion for interpreting that the Alpha coefficient has sufficient reliability is that it should be equal to or greater than 0.70.

Results

The findings of the Delphi application show precision and consensus through expert opinion; however, subjectivity is also attributed to it because it is considered as a procedure.

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Calculation of Alpha Cronbach

		N	%
Cases	Valid	61	100.0
	Excluded	0	.0
	Total	61	100.0

Cronbach's Alpha
Summary of case processing
Source. Calculation in SPSS

Cronbach's alpha	N of elements
.803	61

Reliability statistics

Source. Calculation in SPSS

This high reliability of the instrument (.803) indicates that the measurements and assessments made through it are consistent and accurate, providing a solid basis for making informed educational decisions.

Conclusions

Validation of an instrument is essential to ensure that relevant and necessary aspects of the English language teaching process are being measured. With a coefficient alpha of 0.80, we can be confident that the questions or items included in the instrument are appropriate and reliable for assessing student progress, identifying areas for improvement, and evaluating the effectiveness of teaching strategies.

This process not only benefits educators, but also the students, as it provides them with a more accurate and fairer assessment of their English language performance.

This validation process not only benefits. It also provides school administrators and teachers with valuable information for decision making in curriculum planning and resource allocation.

In sum, validating an instrument with a is an essential step in strengthening English language instruction. It provides a solid foundation for continuous improvement of educational quality and meeting the needs of students and educators, which ultimately contributes to success in English language learning.

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Hyflex: approach in higher education in Mexico

Hyflex: approximación en la educación superior en México

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Abstract

This study aims to investigate if the HyFlex (Hybrid and Flexible) model is an effective teaching approach for higher education in Mexico among the student population. HyFlex is a teaching-learning model that is developed in person and online. This strategy is an innovative didactic experience, with some implications about technology, didactics, sociology, finances, and more. First, to achieve the purpose, the background and origins of the concept were identified, and some problems to implemented. Second, a scientific literature review has been reached which is based on the connective theory, and recent studies reviewed the effectiveness of the Hyflex model. Third, a qualitative approach is based on an opinion survey method, with a convenience sample of 20 students, data collection applied a survey from Google Forms. Fourth, the results are shown and discussed based on a content analysis. The results of these surveys shown that 50 % of students prefer Hyflex. The 70% consider that the institution cannot support Hyflex. The 50% of the sample argue that the Hyflex is not for Mexico. But Hyflex is an effective strategic model. Finally, conclusions and recommendations are presented.

Hyflex, Higher education, Mexico, Teaching learning model

Resumen

Este artículo tiene como propósito obtener la percepción en la comunidad estudiantil si el modelo HyFlex (Hibrido y Flexible) es una estrategia de enseñanza aprendizaje eficiente para la educación superior en México.HyFlex es un modelo de enseñanza aprendizaje que se desarrolla bajo una modalidad presencial, y a la vez se retransmite en modalidad virtual. Si bien esta estrategia resulta una experiencia innovadora también tiene una serie de implicaciones relacionadas con la tecnología, didáctica, sociología, financieras, entre otros. Por lo anterior, para lograr el propósito primero se platearon los antecedentes y orígenes del concepto, grosso modo se exponen algunas problemáticas a las que se enfrentan quienes deciden implementar este modelo. Segundo, se hizo una revisión de literatura sobre la teoría conectivista, así también se revisaron estudios recientes mediante los cuales surgen diversas preguntas sobre la efectividad del modelo Hyflex. Tercero, el estudio se planteó desde un enfoque cualitativo, basado en un método exploratorio, mediante una encuesta de opinión. Cuarto, los resultados muestran que el 50% de la comunidad estudiantil prefiere usar Hyflex. El 70% de los encuestados consideran que la institución no puede financiar el modelo. El 50% piensa que el modelo no está diseñado para la educación superior en México. Hyflex es un modelo estratégico efectivo en otros contextos. Finalmente, se exponen las conclusiones y recomendaciones del estudio.

Hyflex, Educación superior, Mexico, Estrategia de enseñanza aprendizaje

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Introduction

The Hyflex (Hybrid and Flexible) model is a current concept with various theoretical, practical and scientific implications. Theoretically, it is an educational model that works with technological and didactic infrastructure. These characteristics are part of the needs that are required to meet the challenges of modernity in education. From a practical perspective, the Hyflex model responds to various needs, but one is a consequence of the growth of humanity, another is related to the post-pandemic COVID-19 era. Consequently, the scientific implications are a manifestation that responds, or so it is intended, to the unresolved problems, but with a more rigorous and above all scientific approach.

At this juncture, this initiative arises to explore in the student community whether the HyFlex (Hybrid and Flexible) model is an efficient teaching strategy for higher education in Mexico; in order to make an approximation of the term, analyse the characteristics and consider the efficiency in the application of the model. To achieve this purpose, this review first addressed a theoretical framework supported by connectivist theory and multimedia, to understand recent studies or gaps in the literature, as well as to establish questions that respond to the study. Subsequently, the methodological design was based on the exploratory method, through an opinion survey that allowed us to locate the information from different databases, and thus present the results of the research to establish the discussion section contrasting references versus results, and finally generate conclusions and recommendations.

Referential framework

Connectivist theory

The concept of theory is fundamental, in order to identify the characteristics that make it unique. One of the elements that appears behind every theory is the philosophical perspective. Schuh and Sacha (2007) argue that the philosophical perspective reflects assumptions regarding the nature of the world and how we come to know the world. A theory is a principle developed to explain aspects of the nature of the world. In the field of education, it attempts to decipher how the teaching-learning process is conceived, which is why it is inexhaustible to study.

One theory that links education and technology in teaching and learning processes is connectivism. Siemens (2005) argues that technology and connections in learning activities belong to a digital age. Connectivism, first of all, defines learning as a process that occurs within unknown environments with oscillating core elements, without the control of the individual (Siemens, 2005).

This definition determines that learning is always in motion, it is dynamic. It also consists in the fact that there are several participants for its development, there are stimuli that make its interest possible, but it is not simple, it is not clear, at first sight, and it becomes a complex scheme. Now, the issue of connectivism has its essence in the mobility of systems to achieve learning.

Ledesma (2015) on learning and connectivism, states that this theory promotes autonomous individuals who build knowledge, connection networks, languages and integral categories in various contexts of action (p. 34).

Connectivism proposes open, creative and inclusive learning oriented towards the "incorporation of the social value of knowledge that is constructed in a collaborative and connected way" (Ledesma, 2015, p. 19). This approach distinguishes a number of principles in which this theory can be put into practice. Utecht and Keller (2019) list a series of principles that stand out in this theory:

> learning and knowledge, learning is a process of connecting specialised nodes, learning can reside in non-human devices, the ability to know more is more critical, connections need to be nurtured and maintained to facilitate learning, seeing connections between fields, ideas and concepts; accurate and up-to-date knowledge and decision-making (Utecht & Keller, 2019).

In this vein, Siemens (2005) explains how the inclusion of technology and the establishment of connections produce learning activities in a digital age. He considers that personal experience is a source of knowledge that inevitably requires expanding its boundaries, hence the connections that are established allow knowledge to be expanded. In that line of discussion, Stephenson (2004) states that not everything can be experienced in one circumstance, therefore, other people's experiences become a cognitive dissonance. They are axioms for gathering knowledge, not always verifiable, but testimonial (Stephenson in Siemens, 2004).

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Therefore, connectivism includes within its foundations, principles given by chaos theory, network, complexity and self-organisation.

Chaos theory challenges order (Siemens, 2005). Chaos theory recognises the connectedness of disorder. Network and complexity are identified in the theory of connectivism. Knowledge is a conceptual network of knowledge that is achieved from neural connections that is fed by stimuli that generate learning for individuals, it is infinite (Siemens, 2005).

Finally, self-organisation according to Mateus (1988, cited in Siemens, 2005) is the formation of well-organised structures, patterns or behaviours from random initial conditions. Self-organisation is taken as a learning process that requires the individual to classify his or her interaction with a specific environment (p. 6).

Multimedia learning theory

Multimedia Learning Theory has several implications. First, there are two channels for processing information: a verbal and a visual one. Multimedia learning is one where the learner achieves the construction of mental representations using visual and verbal educational material to achieve epistemology. Mayer (2005) as cited in Bravo (2018) defines the term multimedia as "the presentation of verbal and pictorial material" (p. 2). Now, verbal material refers to words, such as printed text or that which is narrated. Pictorial material includes static images or graphic displays (e.g. diagrams, illustrations, maps and photographs) and dynamic material includes videos and animations.

Second, each channel has a limited processing capacity. The visual and verbal channels are known to be able to process only a small amount of information. Meaningful learning occurs when the learner constructs knowledge in an orderly and integrated way. If too many elements are presented in any of the channels, there may be some elements that are not remembered, or chaos or disorder may be generated.

Third, there are three types of storage memories. One is sensory memory, which receives external sensory stimuli and temporarily stores information. Another is working memory, which uses the information obtained from sensory memory. The last is the long-term memory, which has a higher retention capacity.

Consequently, the process is that the elements of learning are interpreted by the sensory memory, then used in the working memory and finally reach the long-term memory. This is where the knowledge is retained by the learner and can be used in other scenarios.

Fourth, five types of cognitive processes: word selection, picture selection, word organisation, picture organisation and integration. First, the learner pays attention to the important concepts of the multimedia message to create sounds in the working memory. Second, in the selection of images he does the same as with the words, but this time with the visual material. Third, in the organisation of the words he links the concepts to create the verbal model. Fourth, in the organisation of images he makes connections between them to create the pictorial model. Fifth, interaction is where the learner makes the connection between the elements of the verbal and pictorial model, and uses prior knowledge (Bravo, 2018).

Fifth, Five types of representation for words and pictures. This representation begins with the stimulus presented to the learner through the words and pictures in the multimedia material. These are then converted into sounds and images in the sensory memory, which are transferred to the working memory. In the working memory the learner builds up in his mind a verbal and a pictorial model. Finally, these models must reach the learner's long-term memory in order to reach full knowledge (Bravo, 2018).

Hyflex

The Hyflex model, although it may seem innovative, has already made considerable progress and has countless applications. Its antecedents date back to 2006 when Dr. Brian Beatty presented it at the Annual Technology Convention of the Association for Educational Communication (Beatty, 2006). This concept interprets two options for learning together: Hybrid and Flexible. This refers to the fact that students can learn face-to-face or virtually, in a flexible way. In other words, dynamism is guided by didactics in the presentation of content, face-to-face or online participation. This decision is based on the fact that the learner is at the centre of learning.

It is worth noting that Beatty (2006) states that the model has four pillars underpinning its use: alternatives, equivalence, reuse and accessibility.

The characteristics of the model are based on four axes: first, alternative the decision of student participation, online or face-to-face modality in relation to dates or contents; second equivalence generate participation activities so that in both modalities the instructional design must follow the same pedagogical strategy to obtain the same performance; reuse refers to the use of the same technological means in both modalities for learning; accessibility equipment and technological competences in an equitable manner for all students (Área-Moreira, et al., 2023).

On this point, various references such as Reigeluth (2011) consider that the paradigms of traditional behaviourist teaching must be broken towards one that redefines the role of the teacher as a controller of the teaching-learning process. The role that should be exercised is that of facilitator for the achievement of individual goals.

Although there are a large number of studies developed by various authors, some, such as Abdelmalak and Parra (2016), Lui and Rodriguez (2019), Detyna (2022), Area-Moreira et al. (2023), among others, agree that the characteristics of the Hyflex model tend to vary according to the scenarios. This refers to the fact that there are a number of implications to be considered when designing this type of course and that they are not for all audiences.

Authors such as Área-Morera et al. (2023), consider that these implications have to do with flexibility in the teaching-learning process (curricular, periods and modality), Learning Management Systems (physical or online), learning autonomy, the didactic method or approach, and learning itinerary (concept, organisation, vision, learning construction and expert map). In the critique of these authors, financial issues must also be considered from this perspective.

The issue of costs should be another variable to be included in the development of this modality, as the equipment used is not common. In other words, it is not only a matter of guaranteeing access to a well-designed classroom, but also of considering aspects such as the technological platform, Internet access, technological equipment such as computers, laptops, cameras, speakers, sound, digital blackboards, among others. According to Ruíz et al. (2022) in Blended pedagogy with high flex classrooms at GEM (2021), the management school in Grenoble France invested 30 million Mexican pesos to equip 32 Hyflex classrooms, which would mean that equipping each classroom would cost approximately 2.5 million pesos. Therefore, a number of doubts arise about the implementation of this modality. However, it is essential to evaluate the learning efficiency of this model from another point of view.

Recent studies

In a study by Zelher, et al., (2021) entitled *Hyflex Simulation: A Case Study of a Creative Approach to Unprecedented Circumstances,* The medical students' perception of the effectiveness of the use of this model during the Covid-19 pandemic at a Midwestern university in the United States of America was presented. The sample consisted of 24 students from the nursing programme. The method used was quasi-experimental, where the following student perceptions were collected under the criteria of critical thinking, clinical judgement, clinical skills and communication. The data collection process took place in both modalities, one in an online session using the Zoom platform and the other face-to-face. The results show that students perceived that there was no difference in the use of one modality or the other. Nevertheless, it is proven that Hyflex can be an effective tool to trigger critical thinking.

Another study presented by Romero (2016), at the eleventh Technology and Information conference called *HyFlex, hybrid and flexible model for university education* In the case of the Universidad Técnica Particular de Loja (UTPL), the research design was designed to answer two central questions about the model and its application. The study also assessed strengths and weaknesses. The results were generally positive, however, the following obstacles were identified: The study to date claims that there is little research on the HyFlex model in Latin America. It was considered that the implementation of the model requires a 360º degree curriculum design as teachers require updates of web 2.0 tools (social bookmarking, blogs, wikis, among others), digital scenarios are a challenge for certain generations of teachers, and finally universities are unable to invest. In any case, the results of the study are focused on developing new competences within the teaching staff to use new technologies.

Finally, another study by González (2021) aimed to develop a comparative systematisation of experiences in two university environments to show successful practices. One at the Universidad Autónoma de Metropolitana (UAM-Mexico Campus) and the other at the Instituto Tecnológico de Monterrey (ITESM-Monterrey Campus).

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The methodological design was based on participatory action-research. The comparative was structured along the following axes: origin of university funding, educational level, digital platforms, subject matter, evaluation, didactic strategies, and educational policy (Gonzalez, et al. 2021).

The results are varied, but in the axis of digital platforms, it is highlighted that educational innovation is granted through the use of Learning Management Systems (LMS). Therefore, it is confirmed that the use of LMS is a trigger for good practices in education. For ITESM, the Hyflex model was used, demonstrating its viability for the teaching and learning process. However, UAM used a platform called Programa Emergente de Enseñanza Remota (PEER).

The above studies raise a number of issues that should be framed in this research.

Research Questions

The above has allowed us to confirm the validity of the use of this model. Hyflex raises concerns that can contribute to further research, development and application. This model permeates different educational sectors, both public and private. However, in practical terms, it is necessary to identify or recognise concepts, characteristics, advantages and disadvantages that could arise in the university context, especially in a public university context. Consequently, the following questions arise to help guide this study.

1. Does the Faculty of Architecture and Design (FAD) have technological infrastructure for the use of the Hyflex model?

2. Does the university community perceive that teachers and students are competent in the use of the Hyflex model?

3. To what extent are the principles of the Hyflex model identified?

4. Do the learning strategies promote concepts, literature reviews, methodologies in face-to-face or online modality?

5. How socially connected do students feel in face-to-face or virtual modalities?

Methodological design

This section describes the methodology used to define the scope of the information found, its analysis, and to determine its usefulness; from the elements necessary to implement the opinion survey. In this sense, the procedure allows the answers to the research questions posed to be obtained. Therefore, this study used a qualitative approach to obtain perceptions on the use of the Hyflex model in a Mexican public university.

Method

The exploratory method is suitable for answering this study. Hernández et al. (2010) argue that research of this type is carried out when the aim is to find out what people think about a topic that has not been addressed much. Although the issue of the use of Hyflex has been considered in other contexts, there is little evidence on its effects in a Mexican public university context. For this reason it is sufficient to investigate the infrastructure, perception, identification, and socialisation of Hyflex.

Population-sample

The population for this study is made up of postgraduate students from the Faculty of Architecture and Design of the Autonomous University of the State of Mexico. In this case, a convenience sample of 30 students was selected for the academic year 2023, with no inclusion or exclusion criteria, only that they were postgraduate students.

Instruments

An instrument alled an opinion survey was used, which was adapted to the needs of the research itself. However, it retained its essence in some questions. It used the google forms platform to collect the information. The instrument has a five-axis structure: infrastructure, Hyflex principles, teaching and student experience, learning strategies and social connection. A questionnaire with 5 questions with 23 items. Supported by a value scale: Strongly disagree 2) Disagree 3) Strongly agree 4) Agree and 5) Don't know. All with the intention of obtaining information in a simple, truthful and reliable way.

Procedure

To achieve the purpose and answer the research questions, the following activities were carried out in the order specified. The steps to obtain the information are as follows:

1. The opinion survey questionnaire was used.

2. It was located on the Google forms platform.

3. An email was sent to the subjects to invite teachers to participate in the filling out of the questionnaire.

4. A time frame of 30 days was given.

5. The platform was monitored to see the degree of response from the participants.

6. The platform was closed and the information was collected.

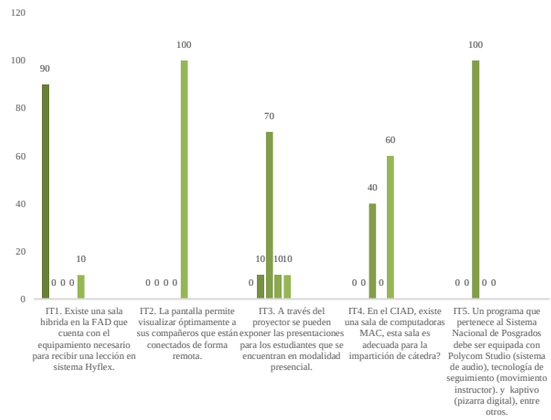
7. The results are presented in graphical displays.

Results

The purpose of the study focuses on the perceptions of the use of the Hyflex model in a Mexican public university. Therefore, the way in which the questions were answered is presented below. Consequently, some graphic visualisers were used to identify some qualitative data on this issue. In sum, a correlation was made between the research questions and the results of the study.

Results related to the research questions

First research question Does the Faculty of Architecture and Design (FAD) have technological infrastructure for the use of the Hyflex model?



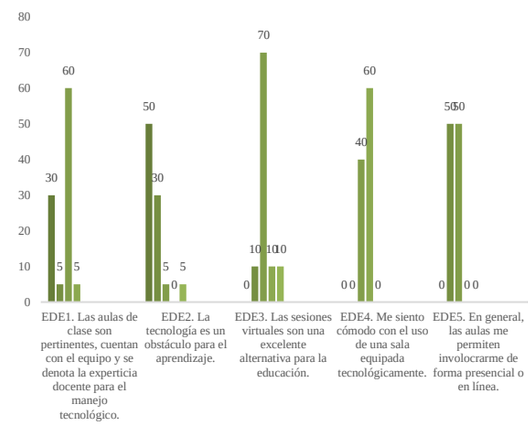
Note: 5 items, related to technological infrastructure, are raised

Graphic 1 Technological Infrastructure

The results in Graphic 1 show five questions that were posed in the instrument. The first question sought to identify the existence of a hybrid room where 90% of respondents confirmed that they disagreed that there is a hybrid room. However, in the second question, 100% of the respondents agreed that there is a screen where they occasionally work to view power point presentations. In the third question, 70% agree that projectors or projectors are used in face-to-face mode. The fourth question on the use of a computer room, where 40% of the participants indicated that they agreed that they did not know that there was a computer room. Finally, 100% of respondents consider that they agree that a programme belonging to the national postgraduate system should have a hybrid room for teaching.

Second research question:

Does the university community perceive that teachers and students are competent in the use of the Hyflex model?



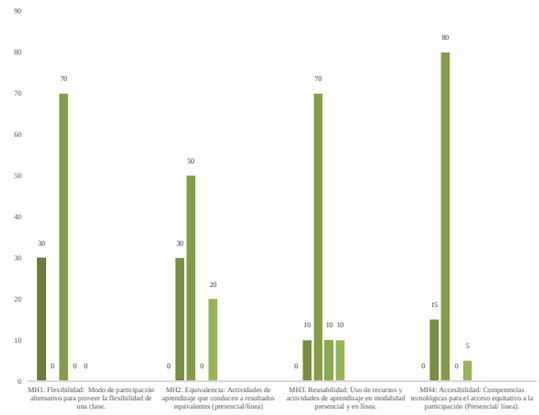
Note: The questioning of 5 items, related to teachers and students

Graphic 2 Teaching experience and students

The results in Graphic 2 indicate the application of five questions. The first question asked about the relevance of the equipment as well as the expertise of the teacher. The results indicate that 60% agree that the classrooms are relevant and that the teacher has the expertise to teach the class, however, 30% disagreed. The second question asked whether technology was an obstacle to learning, 80% of respondents disagreed. The third question on virtual sessions as an alternative for education indicated that 70% agreed. The fourth question considers that 60% agree with the convenience of using a room equipped with technology. Finally, 50% of respondents agreed and 50% disagreed with the question about the use of face-to-face or online teaching.

Third research question

With regard to the principles of the Hyflex Model, to what extent are they identified in your classes?:



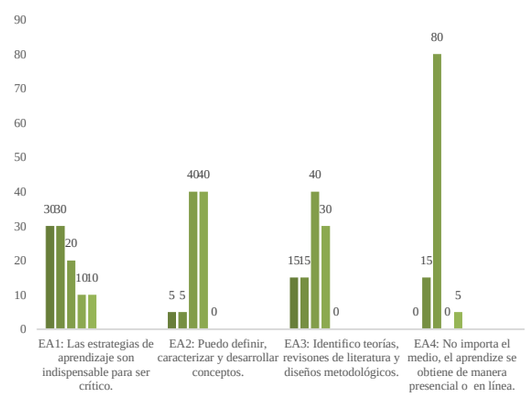
Note: Approach of 4 items, related to the Hyflex principles

Graphic 3 Axis 3. Hyflex model principles (HM)

The results in Graphic 3 set out the principles of the Hyflex model based on flexibility, equivalence, reusability and accessibility. The data indicate that 70% of the respondents agree that class participation should be flexible (MH1). However, on the principle of equivalence, 30% disagreed and 50% agreed with the statement that face-to-face and online learning activities lead to equivalent outcomes (MH2). On the principle of reusability, resources and activities, the results indicate that 70% of respondents agree for both modalities (MH3). Finally, 80% of participants consider that they agree that technological competences should be developed for participation in a face-to-face or online class (MH4).

Fourth research question.

Learning strategies promote concepts, literature reviews, methodologies in face-to-face or online mode. Learning strategies, according to Biggs (1999), are posited as useful techniques for teaching and learning.



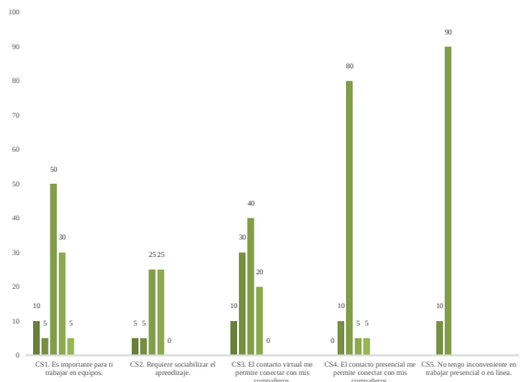
Note: 4 items, related to learning strategies.

Graphic 4 Axis 4. Learning Strategies (LSS)

The results of Graphic 4 are oriented towards learning. Four statements from the instrument are shown here. In the first, the data shows that 60% of respondents disagree that a learning strategy is required to be critical, on the contrary, 40% of respondents agree (EA1). In the second question, 90% of respondents agree that they can define, characterise and develop terms (EA2). In the third question, 70% agree in identifying theories, literature reviews and methodological designs, while the other 30% disagree (EA3). The fourth question, 80% of respondents consider that they agree that learning is obtained in face-to-face or online mode (RQ4).

Fifth research question:

How socially connected do students feel to this model?



Note: 5-item approach, related to social connectedness

Graphic 5 Social connection (CS)

The results in Graphic 5 show five statements oriented to the social connectedness of the respondents. The first statement confirms that 80% of respondents agree on the importance of teamwork (CS1). In addition, the second statement identifies a middle ground between those who require socialising for learning, with 25% saying no and over 75% agreeing (CS2). The statement that virtual contact allows me to connect with my classmates, in the third statement, shows different data, with 40% agreeing that through the virtual modality there is contact (CS3). Likewise, in the previous statement, but in the face-to-face modality, 80% consider it relevant that contact is important to connect with colleagues (CS4). In statement five, 90% of respondents consider that they agree that they can work in face-to-face or online mode (CS5).

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From the results, it is confirmed that there is no classroom for hybrid classes in this context. Respondents stated that it is important to build competences in teachers and students for technological innovation in education. The Hyflex model is an alternative for the teaching-learning process, therefore, there are various strategies that should be used to detonate this tool efficiently and obtain excellent results. In this way, socialisation shows that there are different student profiles; on the one hand, socialisation through the face-to-face modality is indispensable, but on the other hand, the online modality does not prevent socialisation. In sum, the results show in this context that the use of a Hyflex model has various implications that will be contrasted in the following discussion section.

Discussion

In this section, both theoretical and practical aspects were discussed. That is, the contrast between what the authors proposed versus the results obtained. In this sense, the discussion starts from the research questions:

Research question 1

The answer to the question "Does FAD have the technological infrastructure to implement the Hyflex model in the public university system?", the survey focused on statements based on the type of infrastructure available to the academic body (OA), Computers, Audio, Screens, Projectors, and Classrooms. The findings on this axis, in contrast to what Beatty (2006) states, the Hybrid and Flexible model has the virtue of generating learning in both modalities: face-to-face or online. In the survey results, students considered that learning can be obtained in a flexible mode. In the case of the FAD, in relation to infrastructure, it was evident that there is no classroom with the characteristics required for a Hyflex model. There is no multimedia, sound equipment, software, among others. However, there are screens and projectors as resources. In addition, it is worth mentioning that there is a new space called the virtual reality and digital editing laboratory. This space may have the necessary infrastructure for the development of classes using the Hyflex model. In other words, there is no need to make a new investment, but rather to adapt this area to apply this model, especially in the postgraduate courses of the FAD, with multiple benefits for students and teachers.

With regard to an investment for the adaptation of this model, there are some studies such as Blended pedagogy with high flex classrooms at GEM (2021), which focus on recognising that investment in this technology is an alternative to counteract some complex dynamics that arise in adverse scenarios such as pandemics or the physical infrastructure itself. If this is the case, investment should focus on classroom equipment. This strategy is viable because of the benefits, not only for the students or the academic programme, but also to avoid congestion in urban agglomerations.

Finally, the respondents commented that the infrastructure in the academic space (screens, projectors, computers, and classroom) requires periodic renewal and licences for the use of software. Incidentally, these are basic tools for classes, but it is stated that a programme that belongs to the national postgraduate system (SNP) requires state-of-the-art technology to be competitive. This statement is confirmed by González (2021) in his comparative study UAM versus ITESM. Therefore, academic infrastructure is a determinant of the educational success of an academic programme.

Research question 2

The second research question, the university community perceives that teachers and students have competences for the use of the Hyflex model under the face-to-face or online modality. The data collection instrument established statements about competences, technology and face-to-face or online mode. From the data collection, the sample considered that a percentage of teachers and students require training for the development of competences. In this sense it can be highlighted that digital skills need to be developed. Technology is a challenge for all generations as confirmed by Romero (2016). It is for this reason that teachers and students have to add to their skills the use of technological tools, not only for teaching or receiving classes, but also for working with the range of Web 5.0. Learning uses a connectivist educational model (Simmens, 2013).

Respondents also felt that technology is not an impediment to learning. On the contrary, it is a support for educational scaffolding. In the postgraduate course at FAD, the data showed that virtual sessions help learning. It turns out that regardless of the modality, face-to-face or online, there is a comfort in achieving academic goals.

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However, the survey highlights that there is a percentage of similarity between those who feel "comfortable" under virtual or face-to-face modalities. There is a group according to the figures in table 2 that affirms the importance of both modalities. They do not minimise each other but both maximise their benefits.

The above allows for an axis of discussion centred on the students' appreciation or perception of the assimilation of knowledge. According to the survey percentages, learning is generated when technology, competences (teachers and students) and the environment are strategically appropriate. Theoretical, technical, practical and structural involvement are part of a complete system in education, leadership for success in an organisation would be added. In this way all involved are able to participate in the teaching-learning process in the way that suits the individual learner.

Research question 3

The third research question according to the principles of the Hyflex Model for classroom implementation is based on flexibility, equivalence, reusability and accessibility. It was found that in flexibility the system requires adaptations to the curriculum. The instructional design must obey both modalities. The course structure requires academic planning considering the main axes in the design according to the method that suits the OA. However, in the modality section it should be clarified that the course design will be for face-to-face and online delivery.

Equivalence in the Hyflex model, this quality is framed by the learning outcomes achieved by both modalities. The postgraduate students surveyed argue, given their inclination between the use of one model or the other, that the importance of the learning outcome is given by the modality that each of them is inclined or feels more comfortable with. Given this data, it can be interpreted that the result reflects a subjective interpretative perception based on the confidentiality of the assimilation of one's own knowledge.

The reusability in the use of resources, mainly technological, shows valuable information that orients the type of need of each of the postgraduate students. The dynamics of today's research programmes require the implementation of innovation. The results of the survey indicate that 70% of master's or doctoral students agree that reusability is necessary for the development of their competences.

It should be noted that research for the solution of social problems should be at the core of the programmes. This is why using databases, software, digital repositories, statistics, geophraphic information systems, virtual reality laboratories, among others, is essential for studying issues from other global, national, state and local contexts. The issues require a research process that is based on the scientific method.

Accessibility aims to demonstrate that learning can be obtained face-to-face or online. The survey yielded information showing that all students can obtain knowledge through Hyflex. Strengths: technology, Internet, network, applications, software among others, for the generation and application of knowledge. Opportunities: digital skills, research, investment, face-to-face or online, educational coverage. Weaknesses: economic resources and infrastructure. Threats: projection, participation, time.

Research question 4

The fourth question, *learning strategies promote concepts, literature reviews, methodologies in face-to-face or online mode.* The data showed that learning strategies are indispensable for developing critical thinking. However, respondents felt that it is not only critical thinking in which critical thinking can be achieved, but that experience is also a determining factor in gaining knowledge.

They also considered that it is through academic work that learning is achieved, especially when strategies provoke the study of theories, literature reviews or studies on various methodological designs according to the discipline. Likewise, meaningful learning can be achieved through case studies in a variety of contexts. This is why the Hyflex strategy is ideal for face-to-face and online learning as was ensured in the data collection.

Research question 5

Fifth research question how socially connected students feel to this model. The findings show one of the most controversial issues about social connectedness. In that sense, teamwork, socialisation, virtuality and face-to-face showed diverse data.

On the one hand, it is recognised that teamwork is indispensable for any kind of work. Likewise, socialising knowledge makes it possible to achieve significant learning. For some of the respondents, sharing, exploring and exposing knowledge to others is a virtue for generating discussions.

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On the other hand, teamwork can be through the use of platforms, in the organisation of teamwork but virtual, as the discussion takes place in synchronous environments and through the analysis of written descriptions of topics. It is probably an activity that occurs in all environments, not only in academic environments, but also in political, business, scientific and other spaces.

In any case, the social connection is open to all students. In the case of FAD, the evidence supports that it has several factors to analyse, infrastructure, competences, and even emotional aspects. For in this last aspect, education understands that students have different characteristics, as well as different methods of learning. Therefore, it is not possible to pigeonhole students into one type of learning environment, as it is likely that in a sample of students all classifications could be present. From the results it can be said that social connection is not a determinant for learning, but on the contrary, it adds to a series of criteria that occur in a face-to-face or online classroom to make the environment suitable for learning.

Conclusions

In sum, this study focused on eliciting perceptions of the use of the Hyflex model in a public university context. Beatty (2006) considered that the principles of flexibility, equivalence, reusability and accessibility should be incorporated. However, in this context it is concluded that the application of the model raises a number of concerns regarding infrastructure investment.

The case study showed that equipment exists in the FAD that could be used as a virtual laboratory for this type of model. However, the equipment that is regularly used, such as screens, projectors and blackboards, needs to be upgraded. In the case of teachers and students, it is recognised that professionalisation in digital competences must be permanent. The Hyflex model considers principles that are adaptable to any curriculum at higher and postgraduate level. Learning requires strategies to be efficient and effective, involving technology as a mechanism for innovation in the teaching and learning process. And finally, social connectedness is not a constraint to learning, on the contrary, it requires articulating communication, information, technology and leadership schemes.

Limitations of the Study

Creswell (2013) points out that limitations in a study are visualised in the possible weaknesses that the researcher identifies, as well as being related to possible shortcomings in the measurement of variables, limited number of studies, sample sizes, data collection or data analysis. In this study, the search and sample selection work was a constraint to objectivity. This also led to an extension of the content of the information sources consulted.

Recommendations

It is recommended that in the future more studies be generated to explore the relevance of Hyflex in other programmes of the Faculty of Architecture and Design, UAEMEX.

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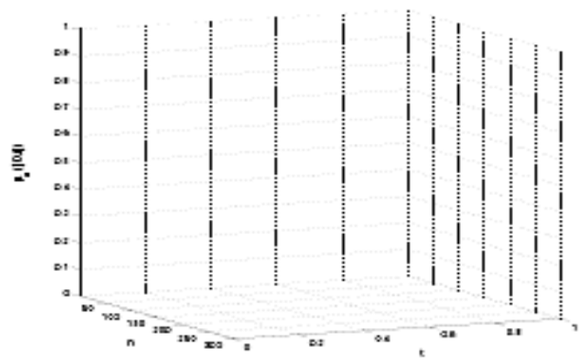

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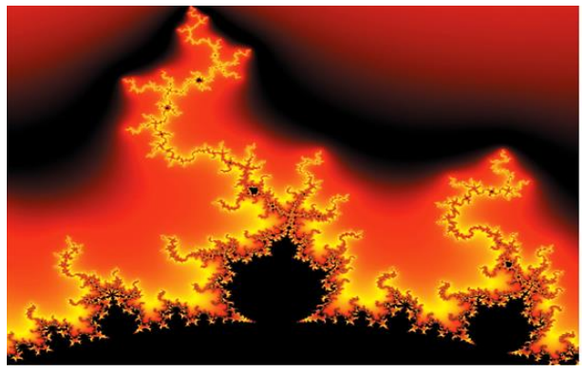

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