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EDITOR

Artificial Intelligence, Chat GPT, and Virtual Reality in Education

Inteligencia Artificial Chat GPT y Realidad Virtual en Educación

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ABSTRACT

This intervention plan will be implemented at the Maryland Educational Unit in Córdoba. Due to technological advances, teachers and students need to incorporate ICT into classroom learning, developing new skills that will help them stay at the forefront of their field. For this reason, we are proposing a training project on educational innovation, providing tools and strategies such as artificial intelligence, aimed at primary school teachers, for the inclusion of new technologies in classroom practices during the 2024 school year. Six meetings will be held. In the first stage, an informative meeting will be held with the management team and then with the teachers. The first meeting will present the topic of artificial intelligence and its applications in education. The second meeting will introduce Chat GPT, and the third meeting will present virtual reality. The fourth meeting will present different platforms for exploring educational virtual reality content. This will be followed by a practical class. The last meeting will present additional resources and online communities for further exploration of these technologies. The meetings will be led by the external educational advisor. The institution's resources will be used. It is hoped that, with these tools, teachers will acquire critical thinking, reflection, comparison and analysis skills for use in the school environment. These tools develop creativity and innovation, exploring multiple possibilities. The purchase of virtual reality glasses is recommended.

Keywords: Inteligencia Artificial; Chat GPT; Realidad Virtual.

RESUMEN

El presente plan de intervención se desarrollará en la Unidad Educativa Maryland de Córdoba, debido a los avances tecnológicos, los docentes y alumnos necesitan incorporar las TIC al aprendizaje en el aula, desarrollando nuevas habilidades que los ayuden a mantenerse a la vanguardia en el medio en el que se encuentran, por eso que se presenta la propuesta de desarrollar un proyecto de capacitación sobre la innovación educativa, brindando herramientas y estrategias como la inteligencia artificial, destinada a docentes de nivel primario, para la inclusión de las nuevas tecnologías en las prácticas áulicas durante el ciclo lectivo 2024. Se desarrollarán 6 encuentros, en una primera etapa se realizará la reunión informativa con el personal directivo y luego docentes. En el primer encuentro se presentará el tema, inteligencia artificial, sus aplicaciones en educación. En el segundo encuentro se introducirá en Chat GPT, durante el tercer encuentro se presentará la realidad virtual. En el cuarto encuentro se presentarán diferentes plataformas para explorar el contenido de realidad virtual educativo. Luego se realizará una clase práctica. En el último se presentarán recursos adicionales y comunidades en línea para seguir explorando estas tecnologías. Los encuentros serán dirigidos por la asesora pedagógica externa. Se utilizarán los recursos de la institución, Se espera que, con estas herramientas, los docentes adquieran la habilidad de pensamiento crítico, reflexión, comparación y análisis para utilizarse en el entorno escolar. Con estas herramientas se desarrolla la creatividad y la innovación, explorando múltiples posibilidades. Se sugiere la adquisición de lentes de realidad virtual.

Palabras clave: Inteligencia Artificial; Chat GPT; Realidad Virtual.

INTRODUCTION

In the present intervention plan work, 'Innovative Learning Models'[1] will be addressed as a thematic line in the Maryland Educational Unit to articulate the reality it presents. Addressing emerging trends in educational activities involving students is crucial for continuous development and innovation.

Innovating in education implies a set of changes implemented systematically and coherently to achieve a transformation, adopting novel methods of learning.

According to Carbonell[2] he defines:

Innovation is a series of interventions, decisions, and processes, with a certain degree of intentionality and systematization, that seek to modify attitudes, ideas, cultures, content, models, and pedagogical practices. And, in turn, to introduce new projects and programs, curricular materials, teaching and learning strategies, didactic models, and alternative ways of organizing and managing the curriculum, the center, and the dynamics of the classroom.

In the words of Fernández Navas[3]:

Educational innovation is a set of changes introduced systematically in an educational practice that is coherent with the knowledge of different areas of expertise in the academic field, as well as with the purposes expressed and shared by the members of the community as a concept of improvement.

For Pierre Levy[4], cyberspace or the network is 'the new means of communication that emerges from computers'. In this sense, innovation in technological resources assumes a leading role in 21st-century teaching.

According to Sánchez[5], digital educational resources are technological tools that facilitate communication, make explanations more engaging, aid in understanding content, facilitate the acquisition of knowledge, and reinforce learning with more practical examples.

Summary of the Institution
General information

Telephone: (38543) 432239/ 433629/ 435656

Website: www.maryland.edu.ar

Mail reference: administración@maryland.edu.ar

The Maryland Educational Unit is an institution located in the town of Villa Allende, belonging to the secular private sector, in the province of Córdoba, in the department of Colón, with an address at Güemes 702. Its orientation is in communication and foreign language.

The institution has a single day, which is studied in the morning shift, with an optional dual schooling program in English (F.O.L.I).[6]

History

The Maryland educational unit began to function in 1994 when a group of members presented projects to the Villa Allende Society. They wanted to create an academic center where values and knowledge could be practiced and shared and which also offered the opportunity to access a bilingual modality with English as a non-compulsory language. For this reason, they created a countershift, which they called F.O.L.I. (Optional English Language Training) to facilitate future exchanges for the pupils.

In 1994, the institution opened classrooms for four- and five-year-olds at the primary level, alongside first, second, and third grades.

In 1995, after obtaining a physical location, two rooms were built for the initial level and two classrooms for the primary level.

In 1999, the middle level began to operate, initially with a basic cycle, outside the institution, as it rented physical space due to the lack of a larger infrastructure.

Currently, the school offers secondary, primary, and kindergarten levels, with two sections for each grade, enrolling approximately 620 students.[6]

Mission statement

The mission is to establish an educational institution where behaviors and values such as solidarity, tolerance, and participation are practiced, providing access to a non-compulsory, bilingual form of the English language.[6]

Vision

The vision is related to treating students as subjects of rights, where the school is in charge of developing empathy and self-esteem in each of its members to make them critical persons in the reality that they create; that is, the school considers each child and adolescent as a unique being with their own history and life project. The school is there to help them empower themselves (Universidad Siglo 21, 2019b).

School values

The institution aims to explore the human capacity for questioning reality and the world, developing

intellectual competence, and fostering values such as respect, critical awareness, tolerance, and authenticity.[6]
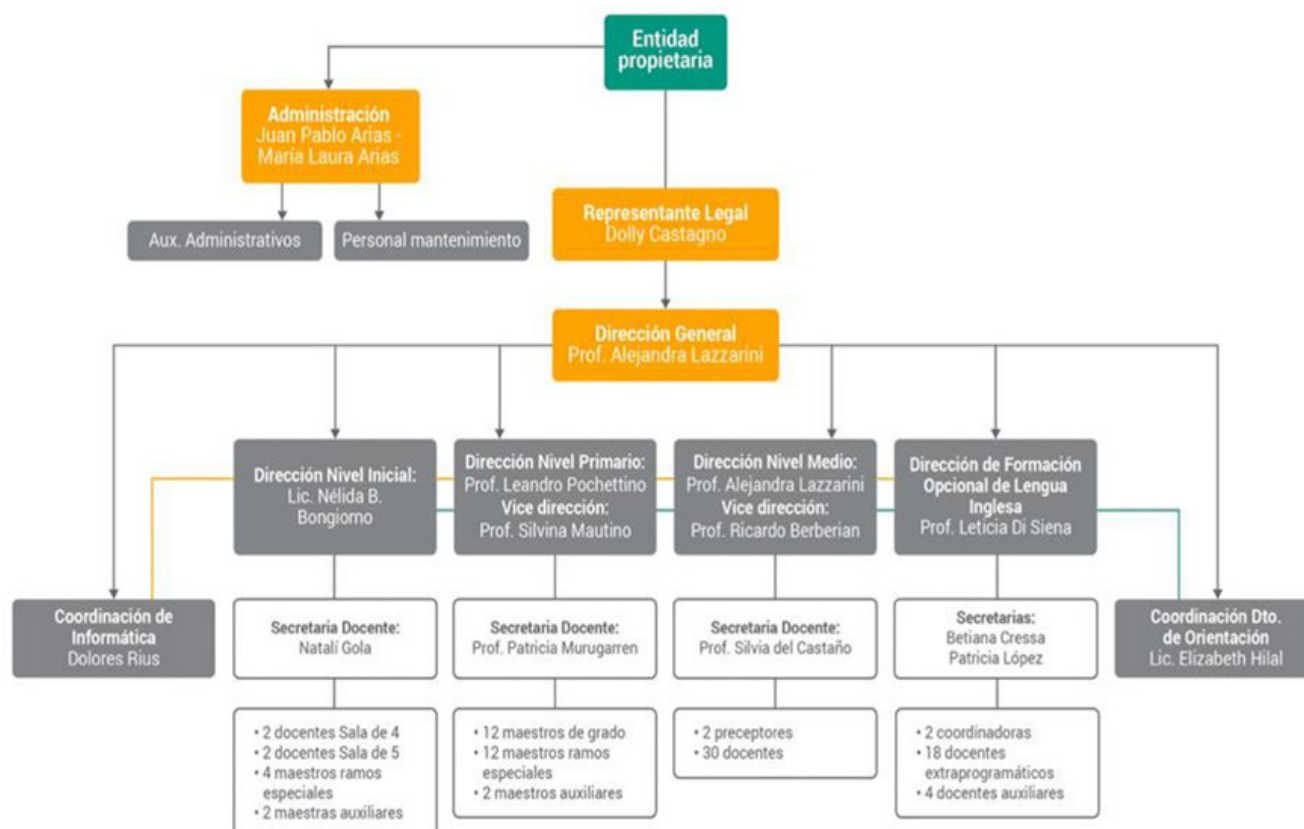
Organisation chart

Figure 1. Organisational chart of the institution[6]

Identifying the Need

In a technologically globalized world where the way things are done is changing at a rapid pace, the digitalization era invites us to rethink teaching models. In this context, educators and learners must incorporate ICTs into classroom learning to develop new skills that will enable them to remain competitive in today's world. In this sense, institutions must align with the demands of digitalization to incorporate new technologies in the current context.

The Maryland Educational Unit has 35 notebooks for use in secondary-level classroom work. The usefulness of these devices and the possibility of accessing the interface at any time in the classroom are essential links in the institution.[6] The objective from the IT department is that 'through the use of the computer' critical thinking can be developed in certain situations such as 'searching for information, selecting it, analyzing it and evaluating it',[6] which allows students to make decisions optimally.

The inclusion of new technologies in education presents excellent opportunities to enhance the learning experience of students and improve the skills of teachers. From the use of computers to more advanced tools such as GPT Chat and augmented reality. These technologies can be effectively used to facilitate teaching and learning, ranging from the use of computers to more advanced tools that incorporate artificial intelligence.

Educators who are willing to adapt and utilize these tools can significantly enhance their ability to engage students, personalize instruction to meet their individual needs and foster creativity and critical thinking. These technologies can also provide educators with the ability to access a wide range of educational resources and stay up-to-date with the latest developments in their respective fields.

However, it is crucial that teachers not only master the use of these tools but also understand how to incorporate them effectively into their pedagogical practice. This implies not only the ability to use technology but also the ability to optimize the teaching-learning process and to adapt to the particular needs of students.

In conclusion, new technologies offer exciting opportunities to improve education; however, teachers must be adequately prepared and willing to adapt to maximize their potential.

These technologies favor the acquisition of knowledge for the required utility and thus 'produce learning, use thinking tools, exercise creativity and draw on stores of information, knowledge and data'.[7]

METHOD

As initially proposed, the main objective of this project is to develop an intervention program based on educational innovation through the application of ICTs, using artificial intelligence, GPT chat, and virtual reality. This intervention plan will be implemented in the Maryland Educational Unit at the primary level, as observed needs for innovation, including teacher training and the integration of artificial intelligence within the institution, have been identified.

Objective: to develop a training project on educational innovation, providing tools and strategies such as artificial intelligence aimed at primary-level teachers at the Maryland of Córdoba Educational Unit for the inclusion of new technologies in classroom practices during the 2024 school year.

Table 1. Action plan participants	
Participants	Teachers of the Maryland Educational Unit
Place	Computer Room of the Institution
Time	6 months. Meetings every 15 days

The teachers will receive a Certificate, stating the hours attended and the subject of the course.

Figure 2. Certificate

Description of the intervention plan

This training program aims to equip participants with the necessary tools and knowledge to integrate these cutting-edge technologies into their pedagogical practices, thereby fostering a more dynamic and innovative educational environment.

Invitations to the educational community

Figure 3. Presentation of the action plan

Meeting with School Management
    In this first phase, a meeting will be held with the institution's management to present the proposal, coordinate and organize the workshops, allocate resources, and establish the timetable, budget, and evaluation criteria. Additionally, to agree on the use of the computer room, we will meet every 15 days.
    Secondly, an informative meeting will be held with teachers to explain the objectives of the proposal and the activities to be carried out.

Activities
    Workshop: Artificial Intelligence, GPT Chat, and Virtual Reality in the Maryland Educational Unit.
    Topics: Artificial Intelligence, GPT Chat, and Virtual Reality Objective:
    Target audience or participants: Teachers of the Maryland Educational Unit. Time: 6 months
    Evaluation is conducted throughout the process to verify its effectiveness and make adjustments as needed. Ultimately, work is also undertaken to determine whether the established objectives have been met.
    Development of the activity:

Primer Encuentro: **Introducción a la Inteligencia Artificial**
        Inicio
    Bienvenida y presentación del tema.
    Breve encuesta inicial usando herramientas interactivas como Menti para evaluar el conocimiento previo sobre inteligencia artificial. Los docentes escanearon el código para responder a la encuesta.

https://www.menti.com/alditp9q1eeo

Fuente: Elaboración propia, 2024.

Una vez realizada la encuesta, se visualizan lo que contestaron y se comentan las diferentes respuestas.

● Desarrollo:

- Proyección de un video: (Anexo 4)

https://www.youtube.com/watch?v=8lMIdrlIWOQ

- Definición de inteligencia artificial y ejemplos simples.

- Actividad práctica: Cada docente ubicado en una computadora cada uno, ingresa al Chat gpt, para realizar un Juego de adivinanzas donde los docentes interactúan con una IA para descubrir qué objeto, lugar o animal están pensando.

- Aplicaciones de la IA en Educación;

- Discusión sobre cómo la inteligencia artificial puede mejorar la educación y las oportunidades de aprendizaje.

● Cierre:

- Reflexión en grupo sobre las posibles aplicaciones de la inteligencia artificial en el aula.

Figure 4. Meeting

Segundo Encuentro: Chat GPT, Una herramienta revolucionaria

- Inicio:

- Revisión de los conceptos aprendidos en la clase anterior: Encuesta con Menti

- Discusión sobre las aplicaciones de la inteligencia artificial en la educación.

- Desarrollo:

- Presentación de ejemplos concretos de cómo la IA está siendo utilizada en las aulas alrededor del mundo.

Chat GPT: Una Herramienta Revolucionaria

1 Generador de Contenido
Chat GPT puede crear rápidamente contenido educativo, desde resúmenes de libros hasta planes de lección.

2 Asistente de Tareas
Los estudiantes pueden usar Chat GPT para obtener ayuda con tareas, prácticas y proyectos.

3 Tutor Personalizado
Chat GPT puede proporcionar retroalimentación individualizada y explicaciones personalizadas a los estudiantes.

1. Profesor virtual personalizado. Plataformas como Duolingo utilizan algoritmos de inteligencia artificial para brindar a los estudiantes un aprendizaje personalizado. Estos sistemas analizan el progreso de los estudiantes y adaptan el contenido para satisfacer sus necesidades individuales. https://es.duolingo.com/register (Anexo 5)

2. Plataforma de aprendizaje adaptativo. Programas como DreamBox Learning y Smart Sparrow utilizan inteligencia artificial para adaptar el contenido educativo a las

Figure 5. Encounter 2

Tercer Encuentro: Introducción a la Realidad Virtual (RV)

- Inicio:

- Recapitulación de los temas anteriores.

- Encuesta rápida sobre las experiencias previas con realidad virtual utilizando Google Drive (Anexo 7)

https://forms.gle/e7Grmco1rGCBax7Z8

- Desarrollo:

- Definición de realidad virtual y sus componentes básicos. (Anexo 8)

Fuente: Elaboración propia, 2024.

- Demostración práctica de una experiencia de realidad virtual relacionada con la educación, utilizando dispositivos simples como Google Cardboard. (Anexo 9)

https://www.youtube.com/watch?v=ElRTWqPZ9es

- Discusión sobre cómo la RV puede mejorar la participación y la comprensión de los estudiantes.

- Cierre:

- Compartir ideas sobre posibles aplicaciones de la realidad virtual en el aula.

- Tarea: Explorar recursos educativos de realidad virtual y seleccionar uno para compartir en la próxima clase.

Figure 6. Encounter 3

Cuarto Encuentro: Integración de la Realidad Virtual en la Enseñanza

- Inicio:

- Revisión de los conceptos clave de la clase anterior. Breve encuesta con formulario Google: (Anexo 10)

https://forms.gle/Do2m32bn3gLrpm6S7

- Presentación de los recursos de realidad virtual encontrados por los participantes.

- Desarrollo:

- Exploración de herramientas y plataformas para crear contenido de realidad virtual educativo

- Utilización de los lentes de realidad virtual. Conoce y aprende a usar nuestro Visor de Realidad Virtual (VR Box)

Dimensión de los poliedros: (Anexo 11)

https://www.youtube.com/watch?v=-ywC-ANXfrw

Explorando   el   cuerpo   humano:(Anexo   12)

https://www.youtube.com/watch?v=3ogBoMtQQYA

Actividad práctica: Diseñar una lección utilizando la realidad virtual para enseñar un concepto específico.
Grupos de discusión: Compartir y dar retroalimentación sobre los diseños de lecciones.
Cierre:
Reflexión sobre los desafíos y oportunidades de integrar la realidad virtual en la enseñanza.
Compromiso de implementar una actividad de realidad virtual en sus clases y compartir experiencias en la próxima clase.
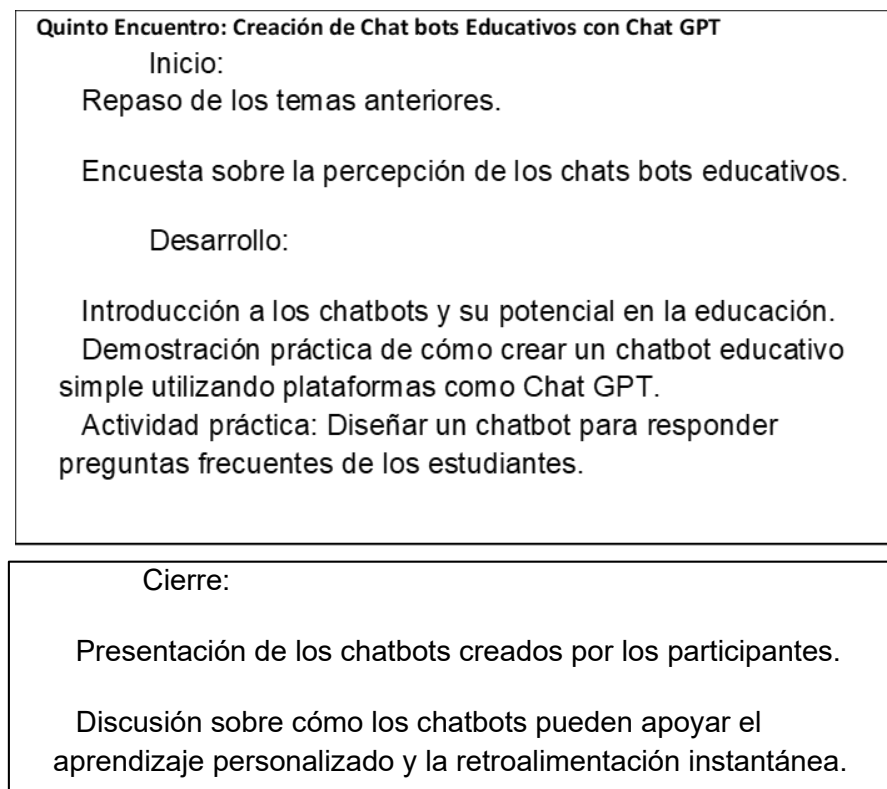
Figure 7. Encounter 4

Quinto Encuentro: Creación de Chat bots Educativos con Chat GPT
        Inicio:
Repaso de los temas anteriores.

Encuesta sobre la percepción de los chats bots educativos.

    Desarrollo:

Introducción a los chatbots y su potencial en la educación.
    Demostración práctica de cómo crear un chatbot educativo
simple utilizando plataformas como Chat GPT.
    Actividad práctica: Diseñar un chatbot para responder
preguntas frecuentes de los estudiantes.

    Cierre:

Presentación de los chatbots creados por los participantes.

Discusión sobre cómo los chatbots pueden apoyar el
aprendizaje personalizado y la retroalimentación instantánea.

Figure 8. Meeting 5

Sexto Encuentro: Integración de Tecnologías Innovadoras en el Aula
        Inicio:

Recapitulación de los temas abordados en el curso.

Encuesta final para evaluar el aprendizaje y la experiencia del curso.

    Desarrollo:

Discusión abierta sobre los desafíos y beneficios de integrar
inteligencia artificial, realidad virtual y chatbots en el aula.
    Presentación de recursos adicionales y comunidades en línea para
seguir explorando estas tecnologías.
    Sesión de preguntas y respuestas finales.

    Cierre:

Reflexión individual sobre cómo aplicarán lo aprendido en su práctica
docente.
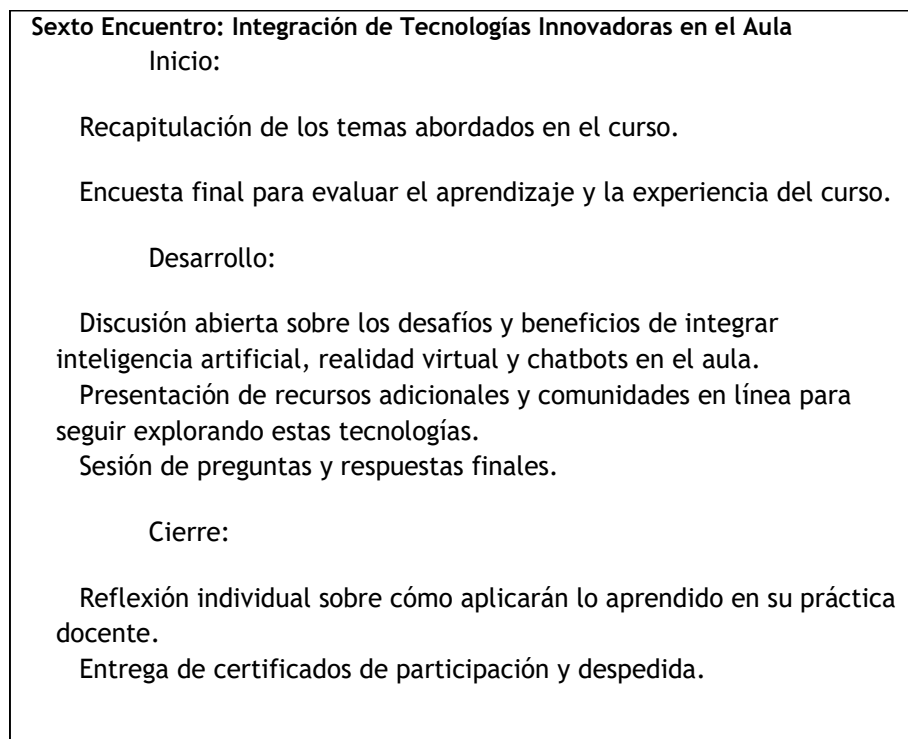   Entrega de certificados de participación y despedida.

Figure 9. Meeting 6

Phase 3
    In a meeting with the management of the Maryland Institution, the stage of evaluation of the intervention plan will take place, a conclusion will be reached and the next steps will be determined.

Figure 10. Conclusions and next steps

Timeline

	Month											
Phases and activities	**Month 1 Fortnight**		**Month 2 Fortnight**		**Month 3 Fortnight**		**Month 4: Fortnight**		**Month 5 Fortnight**		**Month 6 Fortnight**	
	1	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**1**	**2**
PHASE 1												
Meeting with senior management	🟥											
Teaching Staff Meeting		🟥										
PHASE 2 Meetingn n°1			🟩									
Meetingn n° 2				🟩								
Meetingn°3					🟩							
Meeting n°4						🟩						
Meeting n°5							🟩					
Meeting n°6								🟩				
PHASE 3 Evaluation									🟦			
Report										🟦		
Meeting with the director											🟦	🟦

Table 2. Timeline

Table 3. Hours and recipients		
Responsible: External Advisor		
Phases and activities	**Time**	**Destined**
Phase 1 Meeting with management	2 hours	Managerial Staff
Meeting with teachers	1 hour	Teaching Staff
Phase 2	2 hours	Teaching Staff
Meeting n°1: Introduction to Artificial Intelligence	2 hours	Teaching Staff

Meeting n°2: GPT Chat, A revolutionary tool	2 hours	Teaching Staff
Meeting n°3 Introduction to Virtual Reality (VR)	2 hours	Teaching Staff
Meeting n°4 Integrating Virtual Reality into Teaching	2 hours	Teaching Staff
Meeting No. 5: Creating Educational Chatbots with ChatGPT	2 hours	Teaching Staff
Meeting No. 6: Integrating Innovative Technologies into the Classroom	2 hours	Teaching Staff
Phase 3 Evaluation report	2 hours	Teaching Staff
Certificate Award Ceremony	1 hour	Management Staff
Meeting with Management Staff		

Responsable: Asesora Externa

Fases y actividades	Tiempo	Destinado
Fase 1 Reunión con Personal Directivo	**2 horas**	Personal Directivo
Reunión con docentes	1 hora	Personal Docente
Fase 2 Encuentro n°1: Introducción a la Inteligencia Artificial	2 horas	Personal Docente
Encuentro n° 2: Chat GPT, Una herramienta revolucionaria	2 horas	Personal Docente
Encuentro n°3:Introducción a la Realidad Virtual (RV)	2 horas	Personal Docente
Encuentro n°4: Integración de la Realidad Virtual en la Enseñanza	2 horas	Personal Docente
Encuentro n°5: Creación de Chatbots Educativos con ChatGPT	2 horas	Personal Docente
Encuentro n°6: Integración de Tecnologías Innovadoras en el Aula	2 horas	Personal Docente
Fase 3 Evaluación	2 horas	Personal Docente
Informe. Entrega de Certificados	2 horas	Personal Docente
Reunión con Personal Directivo	1 horas	Personal Directivo

Figure 11. Hours and recipients

Resources
Budget

In the first instance, the resources available at the Maryland Educational Unit will be used. The computer room, Internet, speakers. To enhance the virtual reality experience, virtual reality glasses can be used. The unit price is $7948. The quotation obtained on the free market is as follows: https://www.mercadolibre. com.ar/anteojos-vr-box-realidad-virtual-glasses-3d-joystick-control-helmet-smartphone-for-cell-phone-

entertainment-portatil/p/MLA24386303?quantity=1

Table 4. Budget			
Resources	Quantity	Unit price	Expenditure
Pedagogical Advisor	1	Ad Honorem	$206 648
Virtual Reality Lenses	26	$7948	
TOTAL			$ 206 648

Evaluation

The evaluation consists of a process of outlining, obtaining, processing, and providing valid, reliable, and timely information about the merit and worth of a student's learning to make a value judgment that allows for various types of decisions'.[8]

Formative and summative evaluations will be conducted to gather the necessary information for evaluating the education and training process. The review will be diagnostic, summative, and formative.[9,10,11,12]

Diagnostic: to know the profile of the teachers and to detect needs. Formative: Throughout the process, provide better feedback and Summative to determine results and assess the achievement of the teaching objective.[13,14,15]

The training process will take into account how each teacher approached the activities, their understanding of the activities, and other relevant factors. Participation is a crucial step in obtaining the necessary feedback on the proposed work.[16,17]

The evaluation instruments will be online forms, utilizing tools such as Google Forms, which allow for a simple evaluation of the contents. Another resource to be used will be the online test administered via Quiz.

Additionally, another instrument to be used will be the attendance sheet, which will include the following personal home teachers.

RESULTS

Expected results

It is expected that with the intervention plan using communication technologies applying Artificial Intelligence, both chat GPT as virtual reality, achieve the expected objectives, that teachers acquire the skills to innovate education and provide students the opportunity to have an innovative experience where they can create educational content, where they can get help with private and practical tasks.

The theoretical framework is expected to be easily assimilated by teachers. To facilitate their pedagogical tasks, they can offer their students the tools and encourage them to apply and participate in this way, thereby improving school trajectories and enabling them to immerse themselves in virtual environments to enhance interactive learning experiences.

Using augmented reality, teachers and students will have a visual representation of abstract concepts, improving understanding and assimilation.

CONCLUSIONS

ICT tools, such as artificial intelligence, GPT chat, and the use of virtual reality in the classroom, are innovating education and responding to the needs of learners. The use of ICT as a didactic and innovative tool achieves a varied and better quality of education.

GPT Chat plays a vital role in the classroom, serving as a digital assistant for teachers and students. By allowing access to accurate information and explanations in an easy-to-understand format, this chatbot can significantly enhance the learning experience,

Virtual reality simulators, which represent images or scenes, offer endless possibilities, as they allow users, for example, to dive into the sea to discuss marine biology, visit Ancient Rome to learn about its customs and monuments or become an astronaut to travel through space. Thanks to this, motivation is increased, curiosity is heightened, and students' learning is enhanced.

Considering the limitations, it is worth noting that chat cannot replace human interaction. It requires judgment and contextualization by the teacher or student, as a criterion is needed to validate the information provided, making it effective.

As for virtual reality, the institution has the necessary resources, including a computer room. Only the acquisition of virtual reality glasses is suggested.

The integration of institutional actors, from managers to students, in training on new technological innovations is a collective effort to create, enhance, and improve the quality of education.

Once the intervention has been completed, it is possible to integrate online communities to continue exploring these technologies and remain at the forefront of new technologies.

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CONFLICT OF INTEREST
Authors declare that there is no conflict of interest.

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Writing - proofreading and editing: Karina Alejandra Rissone, Vittar Mariana Arruabarrena.