

Technology in the classroom: Exploring the student experience with ChatGPT in the educational process

Tecnología en el aula: Explorando la experiencia estudiantil con ChatGPT en el proceso educativo

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Abstract

Among current technologies, artificial intelligence (AI) systems have a high level of importance in the teaching and learning process. An example of this is ChatGPT, a language model developed by OpenAI that uses neural networks to generate human responses and realistic conversations. This research seeks to understand how students perceive the effectiveness of ChatGPT compared to other forms of educational support, as well as to identify factors that influence its acceptance and adoption. This study adopts a mixed approach, has an experimental design comprising data collection through surveys and semi-structured interviews, to gain a comprehensive understanding of students' experiences and perceptions. The study aims to provide a comprehensive understanding of how ChatGPT technology impacts students' educational experience and offers valuable insights for improving classroom teaching and learning.

Resumen

Entre las tecnologías actuales, los sistemas de inteligencia artificial (IA) tienen un alto nivel de importancia en el proceso de enseñanza y el aprendizaje. Ejemplo de ello es ChatGPT, un modelo de lenguaje desarrollado por OpenAI que utiliza redes neuronales para generar respuestas humanas y conversaciones realistas. Esta investigación busca comprender cómo los estudiantes perciben la efectividad de ChatGPT en comparación con otras formas de apoyo educativo, así como identificar los factores que influyen en su aceptación y adopción. Este estudio adopta un enfoque mixto, tiene un diseño experimental que comprende la recopilación de datos a través de encuestas y entrevistas semiestructuradas, para obtener una comprensión completa de las experiencias y percepciones de los estudiantes. El estudio pretende proporcionar una comprensión integral de cómo la tecnología de ChatGPT impacta en la experiencia educativa de los estudiantes y ofrece valiosas perspectivas para mejorar la enseñanza y el aprendizaje en el aula.

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Objectives	Methodology	Contribution
<ul style="list-style-type: none"> - To know the technological skills of the students. - To establish the factors for the development of the future capabilities of the students. - To develop strategies to develop a competitive mental model in the student. 	<ul style="list-style-type: none"> - Research design: Use a mixed design combining qualitative and quantitative methods. - Participant selection: Select a diverse sample of students. - ChatGPT implementation: Collaborate with teachers to integrate ChatGPT into teaching and learning activities. - Data collection: Use surveys, interviews, and classroom observations to collect data. - Data Analysis: Conduct qualitative and quantitative analyses to identify patterns and emerging themes. - Data Triangulation: Validate findings by comparing different sources and methods of data collection. - Interpretation and conclusions: Provide meaningful interpretations and relevant conclusions to improve technology integration in education. 	<ul style="list-style-type: none"> - A detailed understanding of how students use ChatGPT in the classroom and how this affects their learning. - Evaluate the effectiveness of feedback and how ChatGPT facilitates access to knowledge. - The resulting recommendations would improve the implementation of the technology in education.

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Objetivos	Metodología	Contribución
<ul style="list-style-type: none"> - Conocer las habilidades tecnológicas de los estudiantes. - Establecer los factores para el desarrollo de las futuras capacidades de los alumnos. - Desarrollar estrategias para desarrollar un modelo mental competitivo en el estudiante. 	<ul style="list-style-type: none"> - Diseño de investigación: Utilizar un diseño mixto que combine métodos cualitativos y cuantitativos. - Selección de participantes: Seleccionar una muestra diversa de estudiantes. - Implementación de ChatGPT: Colaborar con profesores para integrar ChatGPT en actividades de enseñanza y aprendizaje. - Recolección de datos: Utilizar encuestas, entrevistas y observaciones en el aula para recopilar datos. - Análisis de datos: Realizar análisis cualitativos y cuantitativos para identificar patrones y temas emergentes. - Triangulación de datos: Validar los hallazgos mediante la comparación de diferentes fuentes y métodos de recolección de datos. - Interpretación y conclusiones: Ofrecer interpretaciones significativas y conclusiones relevantes para mejorar la integración de la tecnología en la educación. 	<ul style="list-style-type: none"> - Una comprensión detallada de cómo los estudiantes usan ChatGPT en el aula y cómo esto afecta su aprendizaje. - Evaluar la efectividad de la retroalimentación y cómo ChatGPT facilita el acceso al conocimiento. - Las recomendaciones resultantes mejorarían la implementación de la tecnología en la educación.

Artificial intelligence, ChatGPT, Educational process

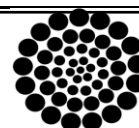
Inteligencia artificial, ChatGPT, Proceso educativo

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Introduction

Integrating technology in the classroom has been a cornerstone in the evolution of the educational process. In this context, the incorporation of innovative tools such as ChatGPT has opened a new horizon of possibilities. This paper explores how interaction with ChatGPT in the classroom can enrich the student experience and transform learning into a dynamic and personalized journey. From creating stimulating dialogues to fostering critical thinking, it will examine how this technology can enhance students' academic and cognitive development. As you delve into this exploration, you will discover how ChatGPT becomes an invaluable ally in the contemporary educational process.

For the results of this paper, a representative sample of students from different careers is taken. It is relevant the use in the research technique (structural analysis), it is intended to associate the tangible and intangible part of the student as such. This technique allows the development of factors in general, associated with the cognitive and attitudinal responses in the students' learning.

It is intended to study in an integral way the problematic in relation to the use of platforms that generate information and how they are used, as well as their real contribution, starting from the hypothesis that the student uses the ChatGPT platform to generate a more dynamic analysis capacity in the development of general capabilities.

Research development

As already mentioned, a sample of 10 students from different higher-level careers was taken in order to obtain all the information, both tangible and intangible, in relation to student learning, with the use of the ChatGPT platform.

For which direct rounds were established with this sample of students, so that the information was obtained directly from the direct source, which allows that there are no biases since it is obtained from the actors involved in the research.

The participation of the students was generated in a dynamic way, since the factors involved in the student's activity were provided directly from the student.

They were able to understand their actions in practice, which resulted in a general understanding by the sample of students. It should be noted that we start from the intangible to the tangible in the handling of information.

Methodology

The structural analysis of the work is very broad, since it is directly immersed in the study population, extracting information without bias, however, it is necessary to work strongly with the interaction of the actors involved.

To move from the intangible to the tangible, it is important to work with the binary system, i.e. 0 means that the factor obtained does not influence and 1 means that it does influence, placing as results the study's motricity (influence) and dependence.

The above mentioned allows to place in Cartesian plane the results obtained, after the structuring of the double entry matrix, (motricity and dependence).

Box 1

Table 1

Motricity and dependence matrix

Factor	Description	Influence of / on														Total Motricity
		F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	
F1	Knowledge		1	1	1	0	0	0	0	0	1	0	0	0	0	4
F2	Personal skills	1		1	1	0	0	0	0	0	1	0	0	0	0	4
F3	Culture	1	0		1	0	0	0	0	0	0	0	0	0	0	2
F4	Educational process	1	1	1		0	0	0	0	0	0	0	0	0	0	3
F5	Student attitude	0	0	0	0		1	1	0	0	0	0	1	1	0	4
F6	Teacher's approach	0	1	0	0	1		0	1	0	0	0	0	1	0	4
F7	Access to information	0	1	1	0	1	1		1	0	0	0	0	0	0	5
F8	Customs	0	0	0	0	0	0	0		1	1	1	0	1	0	4
F9	Technological training	0	0	0	0	1	0	0	1		0	0	0	1	0	3
F10	Network access	0	1	0	0	0	0	0	0	0		1	0	1	0	3
F11	Academic productivity	0	0	0	0	0	0	0	1	0	1		0	0	0	2
F12	Technological skills	0	1	0	0	0	0	0	1	0	0	1		1	1	5
F13	Teamwork	1	0	0	0	1	0	0	0	0	1	0	0		0	3
F14	Technological means	1	1	0	0	1	0	0	1	1	0	1	1	1		8
	Total dependence	5	7	4	3	5	2	1	6	2	4	5	2	7	1	54

Source: Own elaboration

The above table was obtained with the active participation of 10 students from different careers, generating 14 factors involved in this research. This allows establishing the priorities in the Cartesian axes: In order to define the quadrants in which each of the factors belong, the total number of factors, which in this case are fourteen, must be divided by one hundred, $(100/14) = 7.14$, and the initial quadrant (zone of autonomous problems) is placed, counting on the X axis, seven spaces by drawing a line vertically upwards and on the Y axis seven spaces and drawing a line horizontally.

Box 2

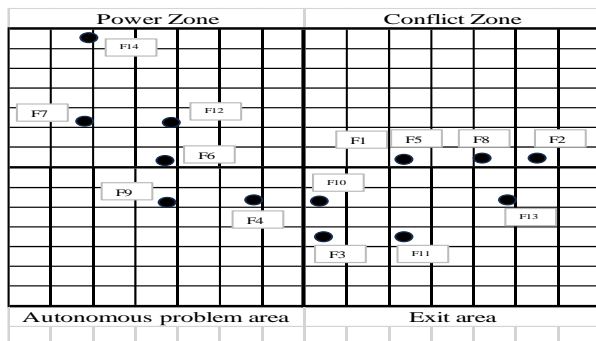


Figure 2
 Definition of factors in quadrants
 Source: Own elaboration

Box 3

Table 2

Percentage values of motor skills and dependence

Factor	Dependency values (X)	Motricity values (Y)
F1	9.26%	7.41%
F2	12.96%	7.41%
F3	7.41%	3.70%
F4	5.56%	5.56%
F5	9.26%	7.41%
F6	3.70%	7.41%
F7	1.85%	9.26%
F8	11.11%	7.41%
F9	3.70%	5.56%
F10	7.41%	5.56%
F11	9.26%	3.70%
F12	3.70%	9.26%
F13	12.96%	5.56%
F14	1.85%	14.81%

Source: Own elaboration

Results

The model is influenced by the six variables of the context, either directly or indirectly on the elements that will support the increase of skills, abilities, knowledge and synthesis capacity, as well as in each of the steps that make up this model, this begins with the commitment of the actors involved, without this commitment it will not be possible to comply with the other points, The next step is the training of the students, they must remain at the forefront in order to be able to effectively face the complications that may arise; The knowledge of the equipment will help them to perform their work in a correct way, that is why this step is suggested; to make the resources efficient refers to perform the functions using the resources in an appropriate way; the generation of agreements in the teaching-learning process, are of utmost importance to be able to have a support before the society that make up the communities.

Box 4

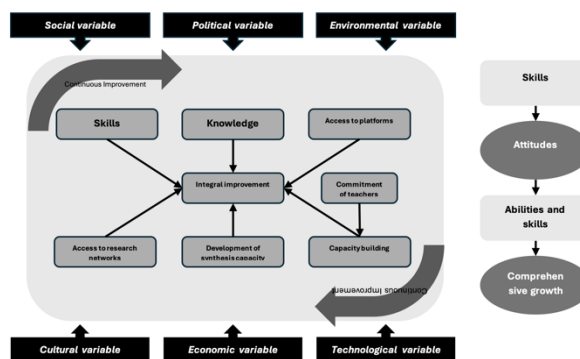


Figure 3
 Proposed model
 Source: Own elaboration

- A. Commitment of students and professors: they are the actors of the research.
- B. Sensitization of the actors: that they perform their functions in an effective and efficient manner to exceed the expectations of their functions.
- C. Training of actors: this element refers to the fact that students and teachers must have the necessary skills, aptitudes and attitudes to provide constant feedback.
- D. Updating of equipment: Personnel must be provided with constant updating of equipment.
- E. Efficient use of resources: This represents great economic benefits for the program, since cost reduction and increased competitiveness can be achieved.
- F. Increased productivity: The objective of the model is to increase personal productivity, which is why it is placed at the center of this model, this is obtained with the fulfillment of each of the elements.

Conclusions

The structural analysis generated the detection of elements with a low level of weighting, which means that the variables of the context significantly influence the priority elements and obtained factors that are in a zone of conflict, indicating that these factors have a high incidence as well as a high dependence between them, the application of the proposed model is recommended since it directly attacks the areas of opportunity found, in order to increase personal productivity in students through the use of platforms such as ChatGTP.

Article

Statements**Conflict of interest**

The authors declare that they have no conflicts of interest. They have no known competing financial interests or personal relationships that might have appeared to influence the article reported in this article.

Authors' contribution

Eliseo-Dantés, Hortensia: Contribution to the main research idea, as well as the methodology to be used and design of the proposal.

García-Reyes, David Antonio: Contribution to the design of the methodology and data collection.

Castro-De la Cruz, Jucelly: Contribution to the design of the methodology and data collection.

López-Valdivieso, Leticia: Contribution to the design of the proposal.

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