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Swot Analysis Of The Use Of Ia Tools Such As Chatgpt In Research Competencies At The Secondary School Level

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Abstract

This research addresses the impact of artificial intelligence, specifically ChatGPT, in the educational environment of secondary schools in Mexico. A SWOT analysis (strengths, weaknesses, opportunities, and threats) is conducted on both the benefits and limitations of this technology in the promotion of research skills and critical thinking in students. On the other hand, relevant issues such as teacher training, digital inclusion, ethics, and responsibility in the use of technology in the educational environment are also raised.

Keywords: *ChatGPT, secondary school, technology, research competencies, critical thinking.*

1. Introduction

The digital era is part of the current features of human society, and in this context, the simplification of tasks in different areas and sectors has been the object of interpretation of technological tools that seek to facilitate the human being's existence in society. This situation interferes with one of the basic competences of the individual: research competences, which are not limited to scientific thinking, but constitute a capacity that has levels of integration and is manifested in a great variety of situations corresponding to different areas of professional and social human life.

The formation of the individuals around research competences sustains the pedagogical practice, cultivating a logic that will allow them, from the logical-hermeneutic-dialectical approach, to go through different levels [1]of essentiality, in a movement that goes through the understanding, explanation and interpretation of the management process. There is a lack of attention in the pedagogical methodology to build critical and reflective thoughts, this is mainly due to the fact that it is not an easy task, since promoting this type of consciousness implies the rebellion of knowledge, questioning what is heard, what is observed, stop feeding on processed knowledge to crumble its parts and identify other ways to solve personal problems or those of society itself.

Despite its difficulty, this type of qualities opens the way to the leap towards a new methodology in education representing a deeper level of essentiality in the interpretation of reality. This guarantees a competent autonomous development of the subject. Exercising a necessary relationship between the categories: training, learning, content, development, education, method and evaluation, since if the educational process is organized through an

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adequate method, developed and systematized in a pertinent manner on the basis of the fundamental pillars of education, the pertinent appropriation of the contents of learning will be made possible and what is being proposed is learning by doing, that is, systematizing the practice of learning to learn to investigate by researching.

However, programming and technology have been evolving in an accelerated manner to the point that by the end of 2022 one of the prototype type language models known as ChatGPT will be launched, whose qualities allow producing a series of almost automatic answers to the formulation of questions, having as sources of information practically the entire database of the Internet, facilitating the construction of knowledge and research; Therefore, reference is made again to the task of digitization to facilitate the tasks of the human being; however, the research process is a task that cannot be delegated lightly, which is why this study aims to describe the factors that define the strengths, opportunities, weaknesses, threats of ChatGPT as a tool of artificial intelligence in the research skills of high school students in the context of the Mexican Educational System.

This is achieved through the development of six research chapters, starting with the structural design of the study, where the general approach of the study problem is presented, as well as the factors that motivate its development; contemplating those elements that determine the limitations of the research, as well as the independent and dependent variables and the way in which they combine with the objectives of this study, formulating a hypothesis that will be resolved in the last chapter of the study. In the second chapter, one of the variables of the study is addressed, such as the implementation of Artificial Intelligence in educational contexts, this chapter delves into indicators such as Machine, Deep Learning and neural networks as the basis of Artificial Intelligence learning; as well as the background of automatic conversation bots and natural language processing; to finally address the notions of Chatbot and ChatGPT as a new way of AI and automatic language modeling.

The third chapter deals with the contextual descriptive analysis of research competencies in the current educational context, within the framework of the knowledge and information society, specifically analyzing the role of the student, the teacher, and the parents or representatives. In the second section of this chapter the theoretical bases for the conformation of the theoretical model of the Processes of Formation and Education of academic researchers are approached with the objective of understanding the value within the educational process at the secondary level.

The fourth chapter addresses the current contextual framework and its interrelation with ChatGPT, so that the normative components of the New Mexican School as an Educational System in Mexico are studied, identifying the current orientation, the design of plans, competencies, and problems that it sustains against the needs of implementing ChatGPT in the classroom as a means of pedagogical support. The fifth chapter develops the SWOT analysis, whose explicit quadrants will allow a balance between the Strengths and Opportunities of ChatGPT versus its Weaknesses and Threats, identified from the deductive and documentary methodology that characterizes this study.

Thus, the sixth chapter of conclusions presents the balance of ChatGPT in the educational process, and mainly in the research competencies of secondary school students in the Mexican Educational System, and how international organizations such as UNESCO have made pronouncements in this regard and pointed out responsibilities in the face of the weaknesses and threats posed by the disruption in the educational sector that could be built from the use of ChatGPT in the classroom and even in academic tasks.

2. Objectives

2.1 General objective

To describe the factors that define the strengths, opportunities, weaknesses and threats of ChatGPT as an artificial intelligence tool in the research skills of high school students in the context of the Mexican Educational System.

2.2 Specific objectives

- To understand the technological elements that led to the launch of this new technology in order to understand the objectives of its creation.
- Analyze the scope that ChatGPT presents in terms of text writing, defining the degree of threat it poses to the production of essays aimed at developing research skills in students.
- o survey the pedagogical strategies that have been formulated around ChatGPT as a didactic tool to determine its strengths and opportunities in terms of building research skills and formulating critical thinking in high school students.
- Explore tools that share features with ChatGPT by determining the near future of these artificial intelligence tools in essay writing.

3. Hypothesis

$H_0 = X_o \Longrightarrow Y_o$

H_0 = ChatGPT has characteristics that can be implemented in pedagogical strategies that develop the research skills of high school students in the context of the Mexican Educational System, as long as the threats posed by its ease of use for the formulation of research are managed.

$H_1 = X_1 \Rightarrow Y_4, Y_5$

The misuse of ChatGPT from its neural networks interfere with reading comprehension and reading skills, as well as a fluency in research writing of high school students.

$H_2 = X_2 \Longrightarrow Y_1$

The cognitive capacity of ChatGPT prevents its users from developing and building a critical positioning of the environment that surrounds them, avoiding reflective thinking that would guide them to present proposals for the common good.

$H_3 = X_3, \Longrightarrow Y_2$

If the scope of Deep Learning that characterizes ChatGPT is simulated in the formulation of research, it can be applied as didactics in the classroom with the aim not only to promote research skills, but also the very database of this technology.

$H_4 = X_4 \Longrightarrow Y_5$

The machine Learning features in ChatGPT facilitate massive information management.

$H_5 = X_5 \Longrightarrow Y_5$

The massive data analysis carried out by ChatGPT should serve as a guide in the formulation of pedagogical strategies that develop and strengthen methodological research skills in high school students

4. Analysis of results

So far we have described the general characteristics of ChatGPT as an artificial intelligence tool, and the way in which it intervenes not only in the investigative skills of the high school student, but also in the other actors of the educational process in Mexico, such as the teacher, the Educational System, and the society itself. Based on this documentary research, it is time to expose the analysis of Strengths, Opportunities, Weaknesses and Threats involved in the creation of one of the tools of cognitive technology such as ChatGPT in the educational process.

SWOT analysis is used to help develop strategies and make informed decisions; for example, by determining and identifying a strength, it is possible to decide how to capitalize on it to achieve an advantage in the educational sector. If a threat is identified, strategies can be developed to mitigate its impact on education, thus assessing the current situation and future prospects of what ChatGPT represents in the formation of research competencies in secondary school students in Mexico.

4.1 Strengths of ChatGPT in the formation of research competencies in high school students.

The analysis of the results of the documentary research begins with the definition of the strengths of the ChatGPT, however, the section is not limited to those relating to the issue of research skills in high school students, but also to factors involved in the other actors of the educational process, as is the teacher, since as it has been pointed out so far, is the central axis of training at this stage of the formation of the individual, so that the first point to address is the ability of the ChatGPT to reduce the administrative burden that corresponds to it, and that is one of the factors that produce the so-called Burnout Syndrome.

4.1.1 Elimination of administrative tasks for teachers

The third section of article 14 of the General Education Law states that in order to fulfill the purposes and criteria of education, the SEP will promote a National Education Agreement that will consider the revaluation of teachers as fundamental agents of the educational process, professionals of training and learning with a broad pedagogical vision; even the fourth title addresses this topic of revaluation, where teachers are centered as fundamental agents of the educational process and their contribution to social transformation is recognized, section V of article ninety states that the revaluation of teachers aims to:

V. Prioritize their pedagogical work and the maximum learning achievement of students over the administrative burden;

ChatGPT can help teachers and administrative staff manage administrative tasks such as generating reports, managing grades and tracking student attendance. Article 94 establishes that the educational authorities, within the scope of their respective competencies, will permanently review the provisions, formalities and procedures with the objective of simplifying them, reducing the administrative burden on teachers, and thus achieving more effective class hours and academic reinforcement.

In this same line, the Ministry of Public Education, at the beginning of 2020, announced through Bulletin No. 2, the beginning of the activities of the Educational Information and Management System (SIGED). 2, the beginning of the activities of the Educational Information and Management System (SIGED), whose purpose is to reduce the administrative burden on teachers, and thus focus their efforts on student learning and defined as an organic and articulated set of processes, guidelines, standards, instruments, actions and technological systems that allow collecting, managing, processing and distributing the information of the National Education System (SEN), generated by the subjects and authorities of the same, with the integrity, consistency and timeliness necessary to support the processes of operation, administration and evaluation of the SEN. The purpose of the SIGED is to provide the SEN with a single Technological Information Platform that allows the Federal Education Authority to carry out its planning, operation, administration and evaluation, facilitating transparency and accountability (SEP, 2020).

The SIGED allows the integration of information related to teaching, administrative and support staff, student enrollment, tracking of grades and attendance, registration and monitoring of educational plans and programs, among other aspects. However, Hernández (2020) points out that it is a myth that with SIGED, schools and especially teachers will stop being part of the endless network of extracurricular tasks, many of them vain but urgent to attend to. Nor is the platform the culprit or panacea of administrative unloading; in any case, it is the rituals, or ingrained practices, that refuse to disappear in each of the educational spaces created for these administrative matters (p. 12).

Technological platforms represent a useful tool, both for academic activities and administrative management, however, there is no total coverage for efficient digital access and it requires economic resources for installation and technical support staff, as well as for teacher training processes for its use, and the teacher, who does not have the resources, age and profile of technological skills necessary to perform the new task will be subjected to acute stress, contributing to the development of Burnout Syndrome. Therefore, it is extremely important that the educational center and management staff generate strategies for technical, administrative and emotional support, to the teaching staff in charge, to successfully make this transition and technological and administrative innovation; and make use of AI as a means of support in their administrative functions.

ChatGPT can support SIGED by providing a friendly and intuitive user interface for faculty, students, and administrative staff using the system. For example, ChatGPT can help users quickly find the information they are looking for within SIGED. In addition, ChatGPT can assist in managing administrative tasks in SIGED, such as creating reports and automating processes. For example, users could use ChatGPT to request the generation of a specific report, and ChatGPT could automatically generate the report and send it to the user.

4.1.2 New content is generated at each request

One of the features of ChatGPT that can benefit this tool is its ability to generate new content for each request. The application allows to "regenerate" an answer, allowing the user not only to obtain an overview of the subject, however, this strength is often limited since when analyzing the way in which new answers are generated to the questions asked, a similarity in the organization of ideas can be noted, even changing the schematic form of the answer but following the same tone.

It should be noted that ChatGPT in the educational field can access large amounts of educational information, which allows to answer questions and provide accurate and updated

information on educational topics; however, the questions must be specific, a situation that requires knowledge of the topic to be investigated, so the more general the questions are, the broader the spectrum that provides the answer. In addition, ChatGPT can interact in different languages, allowing students and teachers from different parts of the world to communicate and obtain educational information in their native or foreign language.

Another function of ChatGPT focuses on its ability to adapt to the needs and preferences of users and customize the educational experience for each student. For example, it can recommend specific educational materials according to the interests and skills of each student; therefore, as it has been pointed out, it has the cognitive capacity to recognize a logic in the questions that are asked, which allows the answers to be more contextualized to the user.

Finally, ChatGPT is available online 24 hours a day, 7 days a week, which means that students and teachers can access it anytime, anywhere, as long as they have an Internet connection.

4.1.3 Semantic production of research in less time

Undoubtedly, one of its most outstanding qualities is its ability to produce essays with approving research semantics. The use of ChatGPT in essay writing can offer several advantages, as it can generate relevant and useful essay ideas from the questions or topics provided. This can be particularly useful for students who have difficulty coming up with ideas for their essay; it should be emphasized that its use is not approved for research formulation, but rather as a means of generating different ideas or perspectives from a synthesis of information.

So ChatGPT can help students save time in writing an essay, as they can get a basic structure for the essay and suggestions on what to include in each section. This means that it has the ability to develop the table of contents of an essay. However, its elements are basic and the program itself warns that the content and structure of any essay proposal will depend on the specific topic to be addressed and the approach to be taken, but it helps students to complete their essay in a shorter period of time.

One of the areas that most favors the production of research using ChatGPT is its ability to provide grammatical and spelling corrections in real time, which can help students to improve the quality of their essay; it can even be a means to detect the use of ChatGPT for research production, the fact that there are no spelling mistakes, which abound in high school.

ChatGPT can provide feedback and suggestions for improving the student's essay, such as whether the essay is coherent and meets the requirements of the assignment.

4.1.4 ChatGPT in the formation of research competencies in secondary school students

ChatGPT offers several options to support the formation of research competencies of high school students, such as providing research resources through links to online resources such as databases, academic journals, research articles, and other research resources relevant to the topic the student is researching, as well as having the ability to provide information on how to develop an appropriate research methodology, including suggestions on how to formulate research questions, how to collect and analyze data, and how to present research results effectively.

The AI program can provide feedback on students' research papers, such as comments on structure, organization, coherence, and quality of content, which could help students improve their research skills, i.e., performs functions of a research teacher.

In asking for proposals for topics on technology in education, the program is proposed for the following purposes:

1. The use of artificial intelligence in education: how can artificial intelligence improve education? What are the challenges and concerns associated with the use of artificial intelligence in education?
2. Gamification in education: how can games and gamification be used in education to improve student learning and motivation? What are the limits and challenges of this educational strategy?
3. The use of virtual and augmented reality in education: what are the possibilities and benefits of using virtual and augmented reality in the classroom? How can this technology improve student learning and understanding?
4. Online education: what are the advantages and disadvantages of online education?
5. The role of social networks in education: How can social networks be used in education? What are the risks and challenges associated with the use of social networks in education?

As it can be observed, the answers attend to two research questions, on the one hand, the improvements, advantages or strengths of the subject or some of the variables, and on the other hand the disadvantages, risks or obstacles that may exist in this relationship, so that they are proposals that follow a logical order. It is noticeable a programming that so far seems basic, since within the scientific research, beyond looking for relations of advantages or disadvantages, factors, contexts, regulations, procedures, philosophical proposals, etymology, didactic proposals, etc. are analyzed.

Overall, ChatGPT could be a useful resource to help high school students in Mexico develop research skills by providing information, feedback and guidance on topics related to research methodology, topic selection and the development of high quality research papers; however, the level of research is limited by the complexity or delimitation of the user's own proposed research question or topic.

4.2 CHATGPT opportunities in the educational process of the Mexican educational system

Another element of the SWOT analysis is the quadrant of opportunities, whose qualities contemplate the scope that the characteristics of ChatGPT can have in the Mexican educational context. For this purpose, three of the tool indicators will be considered. First, the scope of its core, which are neural networks, Deep Learning and machine Learning as formulas for automated cognitive learning; and the current mechanisms of the New Mexican School in terms of the ability to digitally literate teachers in ChatGPT.

4.2.1 Future of Neural Networks, Deep Learning and Machine Learning

The future of Artificial Intelligence is linked to its cognitive capacity characteristic of neural network programming, Deep Learning and machine Learning, which means that as these develop and evolve, so will AI and its different applications. Currently it already has the capacity to develop other tasks, even beyond ChatGPT, some of which include the following:

a) Midjourney.com, creates images from textual requests in a realistic way.
b) Synthesia Creates videos from plain text, videos can be in up to 120 different languages.
c) Al Magic Tools. Collection of more than 30 AI tools created by runway.
d) Avatar AI. Create photorealistic avatars from personal photos.
e) Inworld. Create virtual people just by explaining what you want them to look like.
f) Bing Chat. Conversational AI from Microsoft developed with GPT-4 in collaboration with OpenAI.
g) Flair. Design content for companies. If you have a product you want to promote, this AI will generate product photoshoots.
h) Condium AI. Analyze the code you are programming and generate meaningful tests to help find bugs and errors.
i) Capy.Ai. AI based on ChatGPT designed to help you create all kinds of texts.
j) Andi. A mix of ChatGPT and Google, a conversational search engine that you can ask to find for you anything you want on the Internet.
k) AI text-to-speech; transforms text with any programmed voice.
l) GPTZero. Detects content that has been created using AI.
m) Lensa: One of the most famous mobile applications to create avatars with photos.

So that AI is no longer only focused on the production of research, but can also create images, videos, presentations and even reproduce voices, all this has been achieved from neural networks, the involvement of the machine and Deep Learning, which beyond being a programming subject, interferes in methodologies of different sectors. Just as it is educational, since the individual no longer faces the simplest problems that were had with technology, however, new challenges are born, among which the ability to identify the materials products of artificial intelligence prevails, with the aim of not falling prey to disinformation.

4.2.2 Oportunidad de Alfabetización digital docente en materia de ChatGPT

Undoubtedly, one of the keys to prevent the impacts that Artificial Intelligence could represent in the educational process is the teacher himself and his ability to identify the root of the problem; this implies knowing from its origin what ChatGPT refers to, in other words, dismembering Artificial Intelligence into its parts.

Pedagogy has been prey to political ideologies throughout the neoliberal period, systems and methodologies that seek to measure academic performance through the determination of indicators that define the cognitive, motor and even artistic effort; leaving the human needs of the individual even as extracurricular subjects, a scenario that ultimately adds to what Paulo Freire (1987) called banking education, whose conception can be understood through the following scenario:
The teacher is the subject of education and the learner is the receiver who receives all the contents of wisdom. The task of the teacher is to fill the learners with the contents of his knowledge, in the banking conception, the good educator is the one who best fills the containers in the deposits of the students, and the best learner will be the one who allows himself to docilely fill the containers and learns them with a lot of memorization (p. 30)

This type of scenarios go against the personal formulation of an idea, reflection, critical thinking of the social, family, academic reality that the individual lives, promoting repetition, memorization and in general behavioral pedagogy, anticipating a certain response to practiced scenarios, a situation that goes against social participation, which Gramsci (1975) points out in the following ideas: "includes the strengthening of democratic thinking to assume problems and alternatives for solving them, involves studying the concrete practices of the actors committed to the micropower and macropower" (p.12)

Project Based Learning (PBL) is an opportunity and an important methodological change, a learning methodology in which students are guided to seek possible solutions to a given problem through projects. PBL focuses on students learning through the realization of meaningful and relevant projects for their daily lives. In the context of the New Mexican School, PBL is one of the pedagogical strategies promoted to achieve a quality and relevant education for students.

The PBL of the New Mexican School is based on the idea that learning is more effective when students are involved in practical and meaningful projects that allow them to apply what they are learning in a real and relevant context. The projects are developed based on topics or problems that are relevant to students and that allow them to develop skills and competencies in different areas of knowledge; in addition to the promotion of values such as creativity, innovation, collaboration and teamwork, which are important for the personal and professional development of students in today's world.

This situation arises from Priority Strategy 2.2 of the New Mexican School: To implement innovative, inclusive and relevant pedagogical methods that strengthen teaching and learning processes aimed at improving the quality of education received by students:

Enhance the teaching methods of the teaching staff, through the relevant and sustainable use of digital and audiovisual educational resources that strengthen the learning of students; promote the adoption of the principles of social, environmental and economic sustainability, based on the understanding of the natural and social environment in students and the promotion of critical and scientific thinking, relying on innovative, inclusive and relevant learning experiences.

Thus, academic didactics should not fail to inculcate in students the practice of civics, logic, ethics and philosophy, in order to form responsible, honest and honest people; implement cultural and art workshops, especially painting, music, theater, film, dance and literary creation, for young people; offer creative and innovative workshops for adolescents in areas related to science, technology, engineering, mathematics and robotics; use pedagogical and didactic methods that allow teachers to meet the learning needs of students with a human rights and gender perspective, with the participation of indigenous peoples in the construction of multicultural educational models.

To develop innovative, relevant and inclusive pedagogical methods, which consider collaborative, participatory and playful learning, as well as self-learning, dialogue and teamwork, and to support the access and relevant and sustainable use of Information, Communication, Knowledge and Digital Learning Technologies in everyday life processes with a critical perspective of the contents and materials available in electronic media, virtual platforms and social networks."
It should be noted that Project Based Learning (PBL) has the following main objectives:
1. Encourage active learning: PBL seeks to make students the protagonists of their own learning, encouraging active participation and responsibility in the learning process.

2. Develop skills and competencies: PBL promotes the development of skills and competencies necessary for daily and future life, such as critical thinking, problem solving, effective communication, teamwork and creativity.

3. Contextualize learning: PBL seeks to make learning relevant and meaningful for students, relating it to real and everyday situations.

4. Promote collaboration and teamwork: PBL fosters collaboration and teamwork among students, allowing them to develop social and emotional skills necessary for their daily and future life.

5. Integrate different areas of knowledge: PBL allows the integration of different areas of knowledge in a single project, which promotes comprehensive and cross-cutting learning.

In summary, the objectives of Project Based Learning are to foster active learning, develop skills and competencies, contextualize learning, promote collaboration and teamwork, and integrate different areas of knowledge in a single project. These objectives seek to achieve a more relevant and meaningful education for students, allowing them to develop skills and competencies necessary for their daily and future life, which can be supported by Artificial Intelligence tools.

4.3 Weaknesses of the ChatGPT in the formation of research competencies of high school students

It is time to address what the research has revealed as weaknesses of the ChatGPT in the formation of research skills in the context of secondary school students; first of all, the psycho-emotional framework of the subject, in a stage of physical, cognitive and emotional development. This implies that secondary education is characterized by attending to changing agents, which is a complicated process due to the rebelliousness and uncertainty that characterizes this stage of human development.

Even authors such as Corbella (2014) point out that:

The boundaries of adolescence are imprecise in stating that it is the stage of life that begins with puberty, physiological maturity, and ends in adult social status. The chronological situation of these boundaries is imprecise, as is almost everything that happens during this period (p. 6).

In 2020, INEGI, in collaboration with the Ministry of Communications and Transportation (SCT) and the Federal Telecommunications Institute presented the National Survey on Availability and Use of Information Technologies in Homes, reporting that:

25.5% of the surveyed sample mentioned that there is an excess of unwanted information and 20.3% received messages from unknown persons. Only 13.1% of internet users stated that the main risk of virus infection on their devices, 4.0% information fraud and 3.1% privacy violation (INEGI, 2020)

This situation becomes worrisome because young people are not only exposed to alienation but also to their safety and emotional stability. It is difficult to argue which of all the problems affects more in the life of a young person because both their health and safety are important to develop in a harmonious way in society; The most recurrent health problems are observed when time is spent in an excessive way, dedicating it to entertainment issues and not taking the necessary breaks to make the three most important meals of the day such as breakfast, lunch and dinner, usually do not interrupt their connections and consume any type of fast food or junk food products. Also due to this alienation they lose the desire to spend time with their

family or friends in person and even leave aside major educational or work responsibilities, such as dedicating time to study.

Emotional health is equally important when discussing the risks faced by young people because there are people of little value who hide behind false masks and are dedicated to causing harm, make unpleasant comments to the publications of any person and this leads to the rejection or approval of young people to their peer groups. Therefore, the problems in the navigation increase because the kids accept the invitation of any known or unknown person with the desire to have thousands of followers to achieve a feeling of approval through "likes", not to mention the confidentiality of personal data that are exposed to fill out applications to belong to certain platforms.

Civil associations, the government, parents and adults in general, are now the lifeline for teaching self-regulation in children, adolescents and young people who have an excessive use of technology and social networks through prevention protocols in the use and sharing of personal data, as well as establishing schedules and routines for the proper use of social networks and technology.

Adolescents from high school age begin to seek autonomy in decisions, the interest of opinions of their peers, so that they move away from the family yoke with the aim of forming a more personalized personality, however this is influenced by different factors, among which stands out the digital content, so you must create mechanisms for monitoring consumption without exceeding their autonomy.

Morales Chainé (2020) points out that "in Mexico, 20% of students are at risk of suffering violence, which hinders their insertion in school, family and social life in general, in addition to damaging their performance and school performance" (p. 1). It should be noted that the causes of this indiscipline in students are not found only in the school. According to Edwards (2013), "these can be located at five levels, such as: at home, the society itself, school conditions, school administrative procedures and the teacher himself" (p. 9).

According to Céspedes (2012), "it is currently estimated that between three and five out of ten students show occasional defiant behaviors, and that two out of ten exhibit oppositional behavior on a regular basis" (p. 12). This shows a reality that the teacher has had to face, and that society does not always want to do so, since even technological openness has created a new source of emotions, attitudes and influences, which are not always well channeled, supervised and explained so that they are understood.

Thus, any type of weakness that the ChatGPT may represent in the educational process and in the formation of research skills of the high school student will be determined to the extent that the individual himself applies them; since being a means of production of short research can represent a means of production of tasks that allow him to avoid these academic responsibilities whose objective is to strengthen different skills at home.

This implies that the use of ChatGPT is insurmountable, nothing can stop it, however, it can be identified through its weaknesses, which are described below and of which the teacher must be aware.

4.3.1 False, misleading or inaccurate content

As mentioned in the second chapter, ChatGPT works on the basis of the so-called "Prompts", which is nothing more than the structured formulation of questions, a message that is written

to the chat to initiate or continue a conversation, and the quality of the answers will depend on the quality of the answers. Morales Chan points out that:

The quality of prompts is one of the most important factors in achieving a successful ChatGPT conversation. Well-defined and accurate prompts can help guide the conversation effectively, ensuring that the user's topics of interest are addressed. On the other hand, poorly defined prompts can lead to unfocused and unproductive conversations, resulting in a less engaging and informative experience.

The responsiveness of the ChatGPT is limited to the quality of the interaction through prompts, so the AI is only as good as the information it is given, so it is essential that if the high school student is looking for the best quality research, he or she needs to know how to write and construct a good question (prompt).

Otherwise, the content becomes confusing, impaired, decontextualized to the point of being even false, with implications of variables outside the research environment, decontextualization of ChatGPT responses is a problem that has been widely discussed in the field of artificial intelligence and technology.

This problem refers to the tendency of artificial language models, such as ChatGPT, to generate responses that are detached from the context in which they were asked a question or given an instruction. In other words, when ChatGPT is used to generate answers, the model may generate answers that are unrelated to the original question or that may be inaccurate or misleading. This is of particular concern in the context of education, where students may use ChatGPT to cheat on assignments and tests.

To address this problem, technology developers have proposed a number of solutions. For example, some have suggested using machine learning technology to train artificial language models in a specific context, which would allow them to generate more accurate and relevant responses. Others have proposed using fact-checking techniques, such as verifying the information provided by ChatGPT with trusted sources, to help ensure that responses are accurate and relevant.

The decontextualization of ChatGPT responses is a complex problem that requires innovative and multifaceted solutions. As artificial language technology continues to evolve and become more advanced, it is important that developers and educators work together to ensure that technology tools, such as ChatGPT, are used responsibly and effectively in the education arena.

4.3.2 Biases and inequalities in programming data

It has already been mentioned that the programming has the cognitive characteristic, this means that it is not perfect and it will learn from its interaction with the user, one of these disadvantages that it presents is its evident pointing out of prejudices and inequalities that appear in different redactions. As an artificial language model, ChatGPT is designed to analyze patterns in large sets of natural language data and use that information to generate answers to questions and comments. However, like any technology, ChatGPT is not completely objective and may reflect the biases and inequalities that exist in society.

For example, a 2020 study found that ChatGPT was more likely to complete discriminatory or sexist sentences than neutral sentences. This is because ChatGPT was trained using a large natural language dataset, which can include language patterns that reflect societal biases and stereotypes. In addition, as a language model, ChatGPT can also reflect existing inequalities in access to education and information.

For example, if the dataset used to train ChatGPT comes primarily from English-language online sources, the model may have difficulty understanding the language and culture of speakers of other languages and regions.

These biases and inequalities can have significant consequences for the use of ChatGPT in education. For example, if students use ChatGPT as a source of information, they may be presented with biased or incomplete information. In addition, if educators use ChatGPT to assess student understanding, students from certain backgrounds or with certain language skills may have an unfair advantage.

To address these issues, it is important that technology developers and educators take steps to mitigate bias and inequities in ChatGPT. This could include using more diverse and representative datasets in model training, as well as implementing fact-checking techniques to assess the accuracy and fairness of ChatGPT-generated responses.
Ultimately, it is crucial that attention be paid to the social impact of technology, such as ChatGPT, on education and society at large. By addressing biases and inequalities in the development and implementation of artificial language technologies, work can be done to ensure that these tools are used fairly and equitably for all learners.

4.3.3 Plagiarism and ethical implications

ChatGPT, like any technology, has ethical implications that must be considered, they stem from ChatGPT's ability to influence human thinking and behavior, and may affect privacy, security, fairness and other fundamental values; one of them is privacy, since ChatGPT works through natural language processing, the data used to train and improve the model may contain sensitive personal information, such as names, addresses and other personal identifications. This may pose privacy risks if adequate measures are not taken to protect users' data.

UNESCO notes that in April 2023, Italy became the first country to block ChatGPT due to privacy concerns; the country's data protection authority said there was no legal basis for the collection and storage of personal data used to deliver ChatGPT, the authority also raised ethical concerns about the tool's inability to determine a user's age, meaning minors may be exposed to age-inappropriate responses (UNESCO, 2023, p. 11).

Another concern in terms of ethics is academic integrity, since among the primary concerns and that have been pointed out gradually in this study is the plagiarism that the application implies, since it is not governed by ethical principles and therefore does not distinguish between right and wrong, true or false, since it is a data collection tool that processes by the Internet, so any bias that characterizes it will be copied.

Among the recommendations made by UNESCO on the ethics of AI is the fact of laying the groundwork for AI systems to work not only for the improvement of people and societies, but also for the good of the environment and ecosystems. In this regard, UNESCO recognizes that AI has positive and negative effects, and the recommendations made at the end of 2021 are given with the expectation that governments incorporate them both in the public and private sector to expose their advantages and delimit their weaknesses; however, UNESCO is more oriented towards meeting the challenges that were proposed in the 2030 Sustainable Development Goals in terms of education; therefore, any tool that helps to achieve them will be well received, starting from the clause that seems to be always addressed: Government Accountability.

This means that any new technology is good, as long as it is well regulated by local governments, and it does this from a higher rung in which it makes recommendations to countries considered third world countries where their quality is due precisely to the governmental quality to which they suggest responsibility; UNESCO's guidelines for policy makers on AI and education set out recommendations in seven areas:

a) A vision and strategic priorities for the entire system.
b) An overarching principle for AI and educational policies
c) Interdisciplinary planning and cross-sectoral governance
d) Policies and regulations for equitable, even and ethical use
e) Master plans for using AI in education management, teaching, learning and assessment.
f) Pilot testing, monitoring and evaluation, and the creation of an evidence base.
g) Fostering local innovations in AI for education (UNESCO, 2023, p. 13).

Thus, ChatGPT for UNESCO is more a matter of educational policy than of processes, contexts and educational competencies that are currently at risk. This organization refers to a critical and reflective thinking that comes out of the bankarization of education, where technology does not turn out to be a means to evade the personal cognitive mechanism of formulating a hypothetical deductive thinking, to be only a source of information that can be questioned about its fidelity. Thus, an intelligent society will not be intelligent because of the capacity of its artificial intelligence, but because of the capacity of its members to solve the social, economic, educational, emotional, and other problems of the group itself.

Another ethical implication of ChatGPT is equity. As mentioned above, ChatGPT may reflect existing biases and inequalities in society. This may result in ChatGPT-generated responses that are unfair or discriminate against certain groups of people. It is important to keep this in mind when using ChatGPT in education and other contexts.

Security is another important ethical concern in the use of ChatGPT. Artificial language models can be used for automated text generation, including malicious text such as spam, fake news, and other types of misinformation. In addition, if hackers gain access to ChatGPT models, they could use them to create malicious or misleading content. Finally, ethical responsibility is also an important issue in the use of ChatGPT. Technology developers and ChatGPT users have a responsibility to ensure that the technology is used in an ethical and responsible way, and that steps are taken to mitigate potential risks and ensure that the technology benefits society at large.

It is important to consider the ethical implications of ChatGPT in its use in education and other contexts. Privacy, fairness, security, and accountability are important ethical issues that must be addressed when using this technology. By addressing these ethical concerns, we can work to ensure that ChatGPT is used responsibly and benefits society at large.

4.4 Threats of CHAT GPT in the integral and humanistic formation of students with critical and reflective thinking

The last quadrant of the SWOT analysis is the one that corresponds to the threats, this involves the study of the areas of ChatGPT that have the potential to cause problems, which may even be outside the political control in educational matters to which UNESCO adheres. Among these variables is that of cybersecurity and risks in the personal data of secondary school students, the need for connectivity for its use, and of course the suppression of hypothetical deductive thinking that is built from the research, generating a devaluation of the human nature of the individual.

4.4.1 Cybersecurity and risks to student's personal data

Cybersecurity and data risks are important issues in any technology that handles personal and sensitive information, ChatGPT uses natural language models to generate responses, the data used to train the model may contain personal and sensitive information that must be protected; and therefore one of the most common data risks in the use of ChatGPT is the exposure of personal data.

If training data is collected from public sources, such as social networks or websites, it may contain personal information that users do not wish to share. In addition, if training data is not handled properly, it may be exposed to security risks, such as hacker attacks or data leaks.

Another security risk associated with ChatGPT is the potential for it to be used to generate malicious or deceptive content, such as fake news or phishing emails. Hackers may attempt to leverage ChatGPT's natural language models to generate content that appears authentic, which can put users interacting with it at risk.

In addition, it is important to note that ChatGPT natural language models may reflect existing biases and inequalities in society. If training data is used that reflects these biases, the ChatGPT model may generate responses that discriminate against certain groups of people, which may have ethical and legal implications, cybersecurity and data risks are major concerns in the use of ChatGPT. To mitigate these risks, it is important for technology developers to implement appropriate security measures, such as data encryption and protection against hacker attacks. It is also important to use training data that is ethical and equitable, and to take steps to ensure that the ChatGPT model does not generate discriminatory responses. By addressing these security and ethical risks, we can ensure that ChatGPT is used responsibly and securely in education and other contexts.

4.4.2 Connectivity required for use

Education and connectivity are fundamental issues in Mexico, especially in the current context of the COVID-19 pandemic, where online education has become a necessity to ensure access to quality education. Mexico is a country with a large digital divide, which means that not all people have access to high-speed internet or electronic devices to access online education. This can have a negative impact on access to education and equal educational opportunities.

To address this problem, the Mexican government has implemented several initiatives to improve connectivity and education. For example, the "Internet for All" program aims to provide high-speed internet access in rural areas and marginalized communities. In addition, partnerships have been established with telecommunications companies to provide free internet access in public places such as plazas, parks and libraries.

In education, the government has implemented a distance education strategy that includes educational television and radio, as well as online platforms for primary, secondary and higher education. Programs have also been established to improve teacher training in the use of information and communication technologies (ICT) in education.

However, there are still significant challenges in education and connectivity in Mexico. The digital divide remains a major problem, especially in rural and marginalized areas. In addition, access to electronic devices and connectivity remains limited for many people, which can affect their ability to participate in online education.

In Mexico, of the 154,580 primary, secondary and high schools, only 57,675, or 37.3 percent, the entities with the lowest availability of Internet connection for pedagogical purposes were concentrated in the south-southeast region of the country, which includes Michoacán, with 24. 7% ; Guerrero, 20.9%; Oaxaca, 14.7%; Chiapas, 11%; Tabasco, 21%, and Veracruz, 26.7%; as well as San Luis Potosí, 26.5%, and Durango, 24. 3% (Poy Solano, 2022), although the use of the Internet for pedagogical purposes has become an important tool for teachers and students, its implementation in schools is not so simple, since in some cases the absence of this service is due to the lack of infrastructure to use it, making it difficult to move towards an education with social justice and within the reach of all students; therefore, before addressing the use of ChatGPT in education in Mexico, the problems of educational inequality that continue to characterize the country must be addressed.

4.4.3 Suppression of the scope of hypothetical deductive thinking that is built from research

Hypothetical deductive thinking is a mental process that involves hypothesizing, critical evaluation of evidence, and logical deduction to reach a conclusion.This type of thinking is commonly used in science and problem solving; students at the secondary level must learn from a hypothesis or assumption that has been made, then undertake information gathering and perform critical analysis of the information to determine whether or not it is relevant to the hypothesis in question. If the information is relevant, the individual uses deductive logic to reach a conclusion about the hypothesis.

This thought process is important in the training of the individual because it allows hypotheses to be formulated and tested rigorously, rather than simply accepting an idea as true, scientists use hypothetical deductive thinking to test the validity of a hypothesis and reach conclusions based on evidence; hypothetical deductive thinking is useful because it allows individuals to analyze a problem, consider possible solutions, and evaluate the effectiveness of each solution before making a decision.

It is important to note that hypothetical deductive thinking does not always lead to a correct conclusion. The quality of the original hypothesis, the quality of the information gathered, and the logic used to reach the conclusion are all factors that can influence the accuracy of the final result; so it is not a matter of proving that one is right, but of proving the existence of realities outside the individual. When secondary level students carry out projects, assignments or any type of academic research they are applying an approach from:

- Collecting information according to the interpretation made by the subject under study with their own meanings.
- Understanding reality within a whole/part context.
- It does not seek to explain the facts.
- Use of diverse methods such as participatory observation, case studies, ethnography.
- Inductive rationality.
- Do not generalize data.
- Use an open, flexible research design, constructed during fieldwork.
- To resort to theory not as a reference point in the generation of hypotheses but with the intention of guiding the research in its different stages.

This means, everything that ChatGPT suffers from is built from human logical reasoning, and that is worked in the methodologies, objectives and programs of each one of the school cycles

contemplated by the Educational System, which is currently oriented to a critical, reflexive, humanistic and integral formation, regardless of its lacks, ailments and deficiencies.

4.4.4 Devaluation of humanity in the individual

Dehumanization is a threat arising from the irresponsibility of putting all kinds of tasks in the hands of Artificial Intelligence. ChatGPT is a tool that uses machine learning algorithms to generate answers to questions and comments. While it can provide useful and informative answers, there is also a risk that overuse of ChatGPT can devalue the humanity in the individual.

One possible way this could occur is through over-reliance on ChatGPT for information and problem solving. If individuals rely on ChatGPT to make important decisions or solve complex problems, they could lose the ability to think critically and develop their own cognitive skills.

Another way in which ChatGPT could contribute to the devaluation of humanity in the individual is through the lack of human interaction in problem solving. If individuals use ChatGPT as their primary source of information, they may miss the opportunity to interact with other human beings, which may limit their ability to develop social and emotional skills.

In addition, ChatGPT has limitations in terms of its ability to understand the complexities of human life. While it can provide useful information, it cannot fully understand the human experience and the complex emotions that can accompany it. If individuals rely on ChatGPT to solve emotional or psychological problems, they may miss the opportunity to interact with trained mental health professionals or therapists.While ChatGPT can be a useful tool, its overuse can devalue the humanity in the individual by limiting their ability to think critically, interact with other human beings, and understand the complexities of human life. It is important to use ChatGPT as a complementary tool rather than a complete solution to human problems and limitations.

5. Conclusions

The conclusions seek to provide an answer to the problem posed. Therefore, it is necessary to evaluate the objectives and see if they were achieved or not.

So far, a series of premises planned from the first chapter have been solved, oriented to develop a descriptive study of the characteristics and qualities of one of the most innovative tools in the field of word processing such as ChatGPT, so far its benefits and weaknesses have been revealed; but also to understand its management not only in the international context, based on an interpretation of UNESCO that puts in the hands of local policies the prevention of the risks of this programming. Therefore, it is really the New Mexican School as a Mexican Educational System that should commit itself to deepen in the vertices that the ChatGPT stock implies in the educational process at the secondary level in Mexico; a situation that allows to formulate a critical analysis on these variables and that is developed as follows.

5.1 AI in educational contexts: disruption or opportunity?

Artificial intelligence is becoming an increasingly intrusive tool in the educational field; intrusive because education does not require Artificial Intelligence to exist, even though it is presented as such, even though it offers new opportunities to improve teaching and learning,

as well as to provide innovative solutions to challenges, it is not delimited, characterized or sustained under any of its assumptions.

This is evidenced by the existence of the educational process in marginalized areas, where despite the lack of technological infrastructure, it still prevails, being technology, and not AI, a real means to eradicate problems such as educational backwardness, and the second a way to increase social and educational inequality, at local, state and of course international level, since countries whose contexts boast adequate levels in their educational indicators are able to climb the ladder of Artificial Intelligence as a means to facilitate the educational process, facilitate but not exchange it.

To put in the hands of the local educational policy the threats of Artificial Intelligence, and mainly of the Chat GPT is to challenge them to a blockade of the program itself as Italy did; this is because it is a technological innovation that uses personal information to build knowledge, and this type of technological structures require strict regulation, contemplating all the variables and indicators of the irruption that this implies in the life of the human being, and not to be taken lightly.

And once the potential threats and weaknesses of ChatGPT have been eradicated then its strengths and opportunities can be contemplated, so that AI can help personalize learning for students, providing adaptive resources and adjusting the pace and content of learning to individual needs, with the ability to analyze large amounts of data to identify patterns and trends, which can help educators make informed decisions on how to improve student learning and performance.

However, ethical issues such as algorithmic discrimination or invasion of privacy are too serious to be neglected, AI has the potential to be a transformative tool in education, but it is up to education policy experts to design the necessary tools to prevent these means from representing an obstacle in the construction of knowledge in high school students in Mexico.

5.2 The context of the high school student in the management of AI

Based on the study conducted, it can be asserted that the high school student (12-15 years old) does not have a critical and mature capacity to use a technology such as ChatGPT, not even as a support tool. Students need to be educated about the ethical and social implications of AI. For example, they need to understand that AI can lead to discrimination and bias, and that it is important to develop fair and unbiased algorithms. They must also understand how data is collected and used, and how people's privacy is protected.

Adolescents today are exposed to a wealth of information and content online, which can affect their perception of the world and their development, as well as a culture of consumption and advertising that can influence their values and attitudes towards life. Unfortunately, young people are at the expense of brands that, based on commercial strategies, manage to position themselves with disposable products, such as video games, music, movies, TV series, which, like ChatGPT, lack any regulation to prevent adolescents from what their content may produce; and this is because this task is and has always been the role of the parent or guardian.

The high school student is undergoing significant changes in their physical, cognitive and emotional development. They are in a time of transition from childhood to adolescence and, therefore, may be dealing with emotional changes, such as self-image and identity, and may be experiencing changes in their social and family relationships.

So it is important to keep in mind that adolescents of this age may also be experiencing social and school pressures. They may be feeling the need to fit into their social group and meet the expectations of their peers, as well as academic pressures as they advance in their education and prepare for adult life, and in this case it is the responsibility of the family yoke to have a supervised attention of their integral development, to participate in school tasks and projects with the objective that the educational process does not require Artificial Intelligence as a means of support, but the father, mother or guardian as a means of counseling.

5.3 Integration of CHATGPT into classroom didactics

In short, incorporating ChatGPT in the classroom didactics will only reveal the possibilities it has to produce tasks, although the teacher could use it as a means to reduce administrative burden; but not as a means to intervene in the educational process. The secondary school stage is characterized by building critical, reflective, hypothetical-deductive thinking, so its use as a means of support should be introduced at middle or high school levels, where there is already a basis of scientific methodology that favors a scientific education, not dependent on technology.

Adolescents are growing up in a digital age in which technology and social media are omnipresent. While technology has many benefits, it can also lead to unhealthy dependence; they may be attracted to technology because of the instant gratification it offers. Technology provides an easy and accessible distraction from reality, which can be especially appealing to those experiencing emotional or school difficulties, presenting even difficulty concentrating on important tasks and maintaining healthy interpersonal relationships outside of technology.

It is important for parents of teens to be mindful of technology dependence and set healthy boundaries. This may include setting time limits for technology use, encouraging face-to-face social interaction, and encouraging activities and hobbies outside of technology, so including technology in the classroom should be well designed and planned with the goal of being non-intrusive, in the case of ChatGPT there are no scopes that could be implemented in the classroom that could not be done by the teacher themselves.

It is said that ChatGPT can be used in the classroom as a means of feedback, however, the research itself is a way of feedback. The fact that students ask questions to receive immediate comments from a computer only devalues the human capacity to issue them; for that there are pedagogical methodologies such as round tables, where members discuss topics that interest them, get feedback and increase the internal reflection of the group, having the teacher as moderator; so, Where is the usefulness of ChatGPT in the classroom?

In this particular case, it is concluded that its use in the educational process is limited, unless it is to give automatic answers to unknown topics; but that is the very essence of the educational process: learning to give answers to unknown topics with the help of the teacher, classmates and reliable and not automatic sources of information, since over-reliance on ChatGPT for answers can limit students' ability to develop critical thinking and problem-solving skills.

5.4 General conclusions

It must be clear that the existence of ChatGPT is the evolution of: PROGRAMMING; it is not a success of Pedagogy, Psychopedagogy, Teaching or any other Science of Education; it is the result of advances in machine Learning, Deep Learning and the mathematical design of neural networks for automatic decision making; and derived mainly from the large database that represents the Internet itself, is how this type of tools have managed to have effects not only in education, but also in other sectors that fear the uncertainty of the scope of this form of artificial

intelligence, which despite being part of human life for some time, is now more present from the construction of dialogues or conversations in real time.

The digital era has drastically transformed the way students learn, research and acquire knowledge. The growing popularity of chatbots and artificial intelligence language models such as ChatGPT has led to greater integration of AI in the formulation of research.

ChatGPT itself points out that:

ChatGPT can provide high school students with an efficient tool for quick and accurate research. By simply entering a research question or topic, ChatGPT can provide relevant and reliable information, which can be especially useful for students who have difficulty finding suitable research resources or who do not have access to libraries or online databases.

This means that it is identified as a quick means to provide answers to a question, which interferes with the research skills of the individual. One of the characteristics that give the most value to a study is precisely the quality and quantity of information sources. So it is necessary for teachers to stimulate research through the use of dynamic pedagogical strategies focused on the student through processes of awareness, reflection, experimentation, experience, analysis, criticism and reasoning, which lead to the significant construction of knowledge and autonomous learning, integrating knowledge, skills and attitudes to promote the development of research competencies.

Researchers must ensure that the sources of information are accurate, updated and relevant to their research. It is important to verify the credibility of the source, considering the prestige of the institution that produces it, the reputation of the author and the date of publication, among other factors. In addition, researchers should avoid relying on a single source of information and should try to obtain information from several different sources to ensure the validity and reliability of the results.

ChatGPT itself points out that:

ChatGPT can help students improve their critical analysis skills. Through interaction with ChatGPT, students can learn to assess the validity and reliability of the information provided and to discern between accurate information and misinformation. This can improve their ability to ask questions, formulate hypotheses, and present sound arguments based on data.

A high school student does not have a broad ability to assess the validity, reliability, and understanding of the information provided by a rapid response program; nor does he or she have developed the competence to construct a good prompt, so the usefulness of ChatGPT at the high school level is limited to constructing answers from simple questions posed by students aged 12 to 15, since the real function of assessing validity and reliability will come from the research itself, i.e., formulating a prompt in ChatGPT cannot be considered as a research process.

ChatGPT answers questions very literally and may not understand the full context of a question. Therefore, students should be critical in evaluating the information provided by ChatGPT and consider it as a complementary tool to other information sources and research resources.

5.5 Objectives achieved

From the present research, it was possible to understand the technological elements that have given rise to the launch of this new technology so that the objectives of its creation are understood, and the following have been highlighted in this last chapter: the increase of the

database, neural networks, AI cognitive learning, Deep and machine Learning; that is: cognitive programming.

Another of the objectives achieved was to analyze the scope that ChatGPT presents in terms of text writing, defining the degree of threat it poses in terms of essay production aimed at developing research skills in students, to which it can be resolved that it does not present any kind of threat in terms of essay reproduction, because to present certain quality the so-called prompts must be well formulated; so that the teacher must have the capacity and ability to identify a repetitive and decontextualized writing, where no points of view or critical reflection are expressed, those will be the tasks performed with ChatGPT.

Another objective was to survey the pedagogical strategies that have been formulated around ChatGPT as a didactic tool to determine its strengths and opportunities in terms of building research skills and formulation of critical thinking in high school students; once surveyed it can be said that they are inconsequential since their use is being postulated more in favor of a feedback in the classroom. For this reason, there are different pedagogical tools such as round table discussions, ludic applications, and a series of strategies of personal critical expression that avoid the use of an application used to give answers to questions that are unknown, for which there is the role of the teacher.

Another objective was to explore the tools that share characteristics with ChatGPT by determining the near future of these artificial intelligence tools in the field of essay writing; and it has already been possible to resolve that at present AI already produces videos, presentations, voices, programming, and commercial strategies, however, it does so partially, so it is still a means not an end.

References

A. Urbano, C. (2015). Mapas y herramientas para conocer la escuela: investigación etnográfica. México: Paidos .

Acciarri, H. (2023). Inteligencia Artificial como instrumento de aprendizaje y evaluación en la forma jurídica. EEUUAA: Universidad Nacional del Sur.

Alegría de la Colina, M. (2013). Curso de Lectura y Redacción. México: Universidad Autónoma Metropolitana.

Alemán Ramos, P. F., & García García, A. (2018). Conceptualización de la sociedad actual: Aportaciones y limitaciones. Gran Canaria, España: Universidad de las Palmas de Gran Canaria.

Almeida, J. G. (2023). Claves para entender la relación entre la inteligencia artificial y la creatividad humana: una conversación con ChatGPT. Barcelona, España: Researchgate.

Apiquian, A. (2007). El síndrome de burnout en las empresas. Mérida: Universidad Anáhuac.

Argudín, Y. (2016). Educación basada en competencias; nociones y antecedentes. México: Trillas.

Baladez Hernández, T. (2016). La tecnología en el campo educativo. México: Tecnos.

Basogain Olabe, X. (2019). Redes Neuronales Artificiales y sus Aplicaciones. España: Escuela Superior de Ingeniería de Bilbao.

Bayarroca Martínez, J. (2015). La competencia de trabajo en equipo. México: Vivat Académica.

Bedolla Cesto, E. (21 de Junio de 2019). Ciberseguridad. Recuperado el 10 de Mayo de 2022, de Riesgos y beneficios pde usar las IA para detectar delitos: https://ciberseguridad.com/guias/nuevas-tecnologias/inteligencia-artificial/detectar-delitos/#%C2%BFCual_es_el_papel_de_la_IA_en_el_Derecho_penal

Cano, E. (2015). Las competencias de los docentes. México: Grao.

Carr, W., & Kemmis, S. (1988). Teoría crítica de la enseñanza: la investigación-acción en la formación del profesorado. Zaragoza, España: Universidad de zaragoza.

Cartillo González, W. (2022). ChatGPT y el futuro de la comunicación científica. Argentina: Metaverse.

Centeno Franco, A. (2019). Deep Learning. Sevilla: Universidad de Sevilla.

Céspedes, A. (2012). Niños con pataletas. Adolescentes desafiantes. Chile: B Chile.

Compañ García, J. (2020). Acciones de políticas educativas ante la emergencia sanitaria del COVID-19. . México: Revista Latinoamericana de Estudios Educativos, RLEE, 50(3), septiembre-diciembre.
Consejo de Estabilidad Financiera. (2017). Artificial intelligence and machine learning in financial services. EEUU: CEF.
Contreras García, V. (21 de Abril de 2023). DPL. Obtenido de Senado de México crea Alianza Nacional de Inteligencia Artificial: https://dplnews.com/senado-de-mexico-crea-alianza-nacional-de-inteligencia-artificial/
Corbella, J. (2014). Concepto básico de adolescencia. La nutrición en la adolescencia. Barcelona, España : Piramide.
Córdova Ramírez, E., Piscoya Jurupe, J., & Zurita Pinglo, M. A. (2021). Capacidades Investigativas en estudiantes de Secundaria. Cuba: Revista Conrado.
Dans, E. (2023). ChatGPT... y el miedo a la innovación. EEUU: Enrique Dans.
Data Solutions. (21 de Marzo de 2022). Lis. Obtenido de Deep Learning: clasificando imágenes con redes neuronales: https://www.lisdatasolutions.com/es/blog/deep-learning-clasificando-imagenes-con-redes-neuronales/
Dathathhri, S. (2020). Plug and play language models. EEUU: arXiv.
De Jesús Contreras, Z. (2013). Competencias Investigativas. México: Editorial Educando.
De Jesús Contreras, Z. (2018). Competencias Investigativas. México: Educando.
Del Canto, M. (15 de Febrero de 2023). El Economista. Obtenido de Desmontando el ChatGPT: https://s03.s3c.es/pdf/0/5/051f81287c95b092da9a00cf33c86262_tecnologia.pdf
Delia Durán, N. (2014). Corrientes críticas en educación: cuestionamiento de una propuesta didáctica mexicana. México: Universidad Autónoma de México.
Denyer, M. (2017). Las Competencias en la educación. un balance. México: Fondo de Cultura Económica.
Edwards, C. (2013). Discipline problems and ther causes. . EEUU: Macmillan Publishing Company.
Facione, P. (2017). El pensamiento crítico ¿Qué es y porque es importante? Colombia: Eduteka.
Farías, G. (2012). Espacios de aprendizaje en educación superior: de la profesionalización a la innovación para la transformación social. México: Universidad de Guadalajara.
Freire, P. S. (1987). Pedagogía de la liberación. EEUU: Terra.
Galino, A. (1988). Humanidades, humanismos y humanismo pedagógico. México: Educación XXI.
Gallego Izquierdo, T. (2017). Bases teóricas y fundamentos de la fisioterapia. Madrid: Panamericana.
García Moreno, L. M. (2017). Psicobiología y Educación. Madrid, España: Universidad Complutense de Madrid.
García Peñalvo, F. J. (2023). La percepción de la IA en contextos educativos tras el lanzamiento de ChatGPT: Disrupción o Pánico. España: Grial.
García, J. (2019). ¿Qué tareas han adoptado los chatbots en las empresas? México: Telcel.
Garibay Ornelas, F. A. (2020). Diseño e implementación de un asistente virtual (Chatbot). México: Infotec.
Garrocho Rangel, C. (2017). Análisis de pertinencia social para la universidad pública en materia de investigación científica. México: Universidad Autónoma del Estado de México.
Giraldo Veloza, C. (2018). Los círculos de lectura, una experiencia desde la pedagogía crítica para motivar el proceso. Bogotá, Colombia: Fundación Universitaria Los Libertadores.
Gisbert, M., & Lázaro, J. (2015). Professional developtmen in teacher digital competence and improving school quality from the teachers perspective. EEUU: Journal of New Approaches in Educational Research.
Gobierno de México. (08 de Agosto de 2019). Secretaría de Educación Pública. Obtenido de La Nueva Escuela Mexicana: principios y orientaciones pedagógicas: https://dfa.edomex.gob.mx/sites/dfa.edomex.gob.mx/files/files/NEM%20principios%20y%20orientacio%C3%ADn%20pedago%C3%ADgica.pdf
Gómez Lorente, L. M. (2021). Inteligencia Artificial y Pymes: Chatbots. Colombia: Universidad Polítecnica de Cartagena.
González Medrano, F. (2012). Paradigmas de Investigación; su concepto y Utilidad Científica. México: Mundialización Educativa.
Gramsci, A. (1974). Antología . Madrid, España: Siglo XXI.
Gramsci, A. (1975). Noterelle sulla política del machiavelli. Barcelona: Quaderni del carcere.

Grinberg, M. (05 de Agosto de 2020). Twilio. Obtenido de La guía máxima para el modelo de lenguaje GPT-3 de OPEN AI: https://www.twilio.com/es-mx/blog/la-guia-maxima-para-el-modelo-de-lenguaje-gpt-3-de-openai
Guemez- Hidalgo, M. (2018). Desarrollo durante la adolescencia. México: Pediatría Integral.
Hernández Arriaga, M. (13 de Enero de 2020). Educación Futura. Recuperado el 15 de Noviembre de 2020, de La descarga administrativa a docentes: entre el mito y los rituales: https://www.educacionfutura.org/la-descarga-administrativa-a-docentes-entre-el-mito-y-los-rituales/
Hernández Gallardo, S. (2016). Objetos de aprendizaje para la adquisición de habilidades investigativas en el postgrado en línea. México: Universidad de Guadalajara.
Hernández Moncada, M. (2012). Estrategias de investigación. México: Universidad de Celaya.
Hernández Sampieri, R. (2014). Metodología de la Investigación. México: McGraw Hill.
Hernández, G. (2017). Paradigmas en Psicología de la Educación. México: Editorial Paidós, 2da Edición.
Hidalgo Vicario, M. (2012). Medicina en la Adolescencia, Atención Integral. Madrid, España: Majadahonda .
INEGI. (21 de Marzo de 2020). IFT. Obtenido de En México hay 80.6 millones de usuarios de internet y 86.5 millones de usuarios de teléfonos celulares: ENDUTIH 2019. 17 de febrero: https://www.ift.org.mx/comunicacion-y-medios/comunicados-ift/es/en-mexico-hay-806-millones-de-usuarios-de-internet-y-865-millones-de-usuarios-de-telefonos-celulares
Lam Díaz, R. M. (2015). Metodología para la confección de un proyecto de investigación. México: Instituto de Hematología e Inmunología.
Lazarus, R., & Folkman, S. (1984). Escala de modos de afrontamiento. Estrés, evaluación y afrontamiento. Barcelona, España: Journal of Personality and Social Psychology, No. 45.
Le Boterf, G. (2017). El cuerpo el entorno. Barcelona, España: Paidos.
León, A. (2017). ¿Qué es la Educación? Venezuela: Universidad de los Andes.
Lopezosa, C., Codina, L., & Ferran Ferrer, N. (2023). ChatGPT como apoyo a las systematic scoping reviews: integrando la inteligencia artificial con el framework SALSA. Barcelona, España: Univesitat de Barcelona.
Lujan Ferrer, M. (2019). Enfoques teóricos y definiciones de la tecnología educativo en el siglo XX. México: Actualidad investigativas en Educación.
Machado Ramírez, E. F. (2018). El desarrollo de habilidades investigativas como objetivo educativo en las condiciones de la universalización de la educación superior. México: Revista Pedagógica Universitaria. .
Martínez Clares, P., & Echeverría Samanes, B. (2019). Formación Basada en Competencias. Murcia, España: Asociación Interuniversitaria de Investigación Pedagógica.
Martínez, C. (2018). Investigación descriptiva: definición, tipos y características. México: Jim Content.
Matich, D. J. (2018). Redes Neuronales. México: Universidad Tecnológica Nacional.
Matich, D. J. (2019). Redes Neuronales: Conceptos Básicos y Aplicaciones. México: UNAM.
Mcconville, M. (2009). Adolescentes: El self emergente y la psicoterapia. Madrid: Sociedad de Cultura.
McTear, M., Callejar, Z., & Griol, D. (2016). The conversational interface: Talking to Smart Devices Springer. EEUU: Springer.
Morales Chainé, S. (01 de Junio de 2020). Fundación UNAM. Recuperado el 01 de Enero de 2021, de En México, 20% de los niños en edad escolar en riesgo de padecer problemas de conducta: https://www.fundacionunam.org.mx/unam-al-dia/en-mexico-20-de-los-ninos-en-edad-escolar-en-riesgo-de-padecer-problemas-de-conducta/
Morales Chan, M. A. (2023). Explorando el potencial de Chat GPT: una clasificación de Prompts efectivos para la enseñanza. Guatemala: Galileo University.
Morales, O., Rincón, A., & Romero, J. (2018). Como enseñar a Investigar en la Universidad. México: Editorial Educere.
Moreno, R. (12 de Enero de 2017). Formulación del pensamiento científico. Obtenido de Instituto McLaren: http://cdn.slidesharecdn.com/ss_thumbnails/esquemacompetenciasinvestigativas-120114135411-phpapp01-thumbnail-4.jpg?cb=1326549295
Morin, E. (2015). Los siete saberes necesarios para la educación del futuro. . México: UNESCO.
O´Leary, J. (2017). Técnicas de Inteligencia Artificial aplicadas al análisis de solvencia empresarial. . España: Universidad de Oviedo.

Ocampo López, J. (2018). Paulo Freire y la pedagogía del oprimido. Boyacá, Colombia: Universidad pedagógica y tecnológica de Colombia.
OCDE. (2010). Acuerdo de cooperación para mejorar la calidad de la educación de las escuelas mexicanas. . México: OCDE.
Ojeda, E. E. (2023). Chat GPT, Revolución de la Inteligencia Artificial en las Conversaciones. México: Santillana.
OMS. (2009). Global Health Risks. Mortality and burden of disease attributable to selected major risks, . Ginebra: OMS.
OMS. (2013). Recuperado el 10 de Diciembre de 2019, de http://publicaciones.ops.org.ar
Ortiz Ocaña, A. (2015). Modelos pedagógicos y teorías del aprendizaje. México: Ediciones de la U.
Padial, J. J. (2019). Técnicas de programación "Deep Learning". España: Universidad de Málaga.
Patiño, H. (2012). Educación Humanista en la Universidad. Méixoc: Perfiles Educativos.
Patiño, J. F. (2016). Computador, cibernética e información. Colombia: Editorial Panamericana, 3ra Edición.
Piaget, J. (1969). The intelectual development of the adolescent. New York: Basic Books.
Piaget, J. (2006). La teoría de Jean Piaget y el Aprendizaje de las Ciencias. México: Universidad Nacional Autónoma de México, 5ta Edición.
Pineda Pérez, S. (2016). El concepto de la Adolescencia. México: INFOMED.
Ponce Gallegos, J. C. (2016). Inteligencia Artificial. México: Iniciativa Latinoamericana de Libros de textos abiertos.
Poy Solano, L. (03 de Marzo de 2022). La Jornada Online. Obtenido de Solo 37.3% de escuelas tienen Internet con fines pedagógicos: https://www.jornada.com.mx/notas/2022/03/03/sociedad/solo-37-3-de-escuelas-tienen-internet-con-fines-pedagogicos-reporte/
Quintana Cabanas, J. M. (2019). Propuesta de una Pedagogía Humanista. España: Revista Española de Pedagogía.
Radford, A., Wu, J., Child, R., Luan, D., Amodei, D., & Sutskever, I. (2018). Language models are unsupervised multitask learners. EEUU: Opean AI blog.
Ramírez Bravo, R. (2008). La Pedagogía Crítica; una manera ética de generar procesos educativos. México: Revista Folios.
Ramírez López, C. A., & Eder Loaiza, Y. (2016). Educación y género en el horizonte del reconocimiento recíproco. Bogotá, Colombia: Siglo del Hombre.
Ramos, J. (2023). ChatGPT para la Educación del Siglo XXI. México: XinXii.
Rizo, M. (2014). Enseñar a investigar investigando. México: Editorial PUCP.
Rodríguez Cavazos, J. (2013). Una mirada a la pedagogía tradicional y humanista. México: Universidad Autónoma de Nuevo León.
Rodríguez, L. (2017). Estrés docente de educación básica. Venezuela: Universidad de Carabobo.
Sabino, C. (2018). El proceso de Investigación. Caracas, Venezuela: Panapo.
Salas, R. (2023). Redes Neuronales Artificiales. Santiago de Chile, Chile: Universidad de Valparaíso.
Salazar Martínez, E. (2012). Análisis y comprensión investigativa. México: Universidad Autónoma de Morelos.
Sánchez, A., Boix, J., & Jurado, J. (2015). La sociedad del conocimientos y las TICs: una inmejorable oportunidad para el cambio docente. México: Píxel Bit.
Scott, k. (22 de Septiembre de 2020). Microsoft teams up with opean AI to exclusively license GPT 3 lenguage model 2020. Obtenido de Official Microsoft Blog: https://blogs.microsoft.com/blog/2020/09/22/microsoft-teams-up-with-openai-to-exclusively-license-gpt-3-language-model/
SEP. (2020). Gobierno de México. Recuperado el 01 de Noviembre de 2020, de ¿Sabes qué es el Consejo Técnico Escolar (CTE)?: https://www.gob.mx/sep/articulos/sabes-que-es-el-consejo-tecnico-escolar-cte?idiom=es#:~:text=El%20Consejo%20T%C3%A9cnico%20Escolar%20(CTE)%2C%20son%20reuniones%20de%20educaci%C3%B3n,mismo%2C%20con%20el%20objetivo%20de
SEP. (15 de Enero de 2020). Gobierno de México. Recuperado el 15 de Noviembre de 2020, de SIGED: https://siged.sep.gob.mx/SIGED/
Smitter, Y. (2016). Hacia una perspectiva sistemática de la Educación no formal. Caracas, Venezuela: Laurus.

Tapalova, O., & Zhiyenbayeva, N. (2020). Artificial Intelligence in Education: AIEd . Kazahstan: European Jounal of E-Learning.
Torres Rivera, A. D. (2014). Las competencias docentes: el desafío de la educación superios. México: Innovación Educativa.
Trujillo Fernández, D. (2017). Aplicación de metodologías Machine Learning en la Gestión de Riesgo de Crédito. Madrid, España: Universidad Politécnica de Madrid.
Tuomi, I. (2018). El impacto de la IA en el aprendizaje, la enseñanza y la educación. Luxemburgo : Publications Office of the Eurpean Union.
UNESCO. (15 de Enero de 2019). UNESCO. Obtenido de La Inteligencia Artificial en la Educación: https://es.unesco.org/themes/tic-educacion/inteligencia-artificial#:~:text=La%20inteligencia%20artificial%20(IA)%20tiene,la%20consecuci%C3%B3n%20del%20ODS%204.
UNESCO. (2023). ChatGPT. México: UNESCO.
UNESCO. (15 de Enero de 2023). UNESCO. Obtenido de LA IA EN LA EDUCACIÓN: https://es.unesco.org/themes/tic-educacion/inteligencia-artificial
Vallecano, F. (2019). "Taller de Investigación Académica". México: Trillas.
Weizenbaum, J. (1966). A computer program for the study of natural language communication between man and machine. EEUU: Communicatios of the ACM.
Wenth, A. (2023). ChatGPT-!Habla conmigo¡. USA: Andreas Wnth, MSc.
Woodman, L. (2018). Information magnament in large organizations. Londres: ASLIB.
Zumstein, D., & Hundertmark, S. (2021). Chatbots An interactive Technology for Personalized Communication, Transactions and Services. EEUU: International IADIS Journal.