



This is the **published version** of the bachelor thesis:

Calduch Gas, Júlia; Castellvi Mata, Jordi, dir. Exploració de la relació entre la IA Generativa i el pensament crític a l'Educació Primària. Bellaterra: Universitat Autònoma de Barcelona, 2024. (Grau en Educació Primària)

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BACHELOR THESIS

**Exploring the relationship between AI Gen and Critical thinking skills in
Primary Education**

Opinions and perspectives across the educational spectrum

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Submission: 3rd June 2024

Acknowledgments

I would like to start by expressing my gratitude for all the support and confidence I have received throughout the completion of the thesis. Many people have contributed to this journey in various ways, but there is one person I must highlight first. Thank you, Jordi, for your extensive guidance, motivation, patience and inspiration during this process.

Furthermore, I would like to mention all the interviewed participants of this research. Without your involvement, this work would have not been possible. Thanks for your time, dedication, professionalism and valuable opinions. You have enriched me with your reflections, diverse perspectives, knowledge and a continued desire for learning.

Lastly, to you, reader, I hope you enjoy as much as I did creating it and that it inspires you with the same enthusiasm to continue learning.

Abstract

This thesis explores the relationship between the use of Generative Artificial Intelligence (GenAI), specifically focusing on ChatGPT, and the development of critical thinking in primary education. The relevance of this investigation is underscored by the fast development and growing presence of the artificial intelligence in many aspects of daily life. Education being one of those, it becomes crucial to navigate the complexities of incorporating AI in learning environments and evaluate its wide implications in primary education. Therefore, this research strives to acknowledge the potential challenges and opportunities associated with integrating Chat GPT into the classrooms. To do so, the study utilizes semi-structured interviews to gather diverse perspectives from four groups: first-year primary education students, fourth-graders primary education students, current primary school teachers, and University professors experts in the field of social and natural sciences. By analyzing the diverse perspectives from nine participants across the educational spectrum, this research aims to illustrate the suitability of Chat GPT within the classroom, educator's practical perspectives and future prospects of its use. This conclusion shed light on the complex relationship between the use of GenAI and critical thinking in an age that this competence have not been acquired yet and the imperative necessity to reinvent and revolutionize how education is taught and acquired.

Key words: Chat GPT; Critical Thinking; Educators; Generative Artificial Intelligence (GenAI); Primary Education.

Resum

Aquest treball de final de grau explora la relació entre l'ús de la intel·ligència artificial generativa, concretament el ChatGPT, i el desenvolupament del pensament crític a l'etapa d'educació primària. La rellevància d'aquesta investigació esdevé a causa del desenvolupament exponencial de la intel·ligència artificial, per ara sense límits establerts, en molts aspectes de la vida quotidiana. Aquest estudi entén l'educació com a un aspecte clau, i per tant esdevé crucial estudiar les complexitats a l'hora d'incorporar-la als entorns d'aprenentatge i analitzar les seves implicacions més rellevants. Així doncs, aquesta investigació s'esforça per reconèixer els possibles reptes i oportunitats associats a la integració de Chat GPT a les aules de primària. Per fer-ho, l'estudi du a terme entrevistes semiestructurades per recollir diferents perspectives de quatre grups: alumnes de primer curs del grau universitari d'educació primària, alumnes de quart any del grau, mestres de primària i professors universitaris experts en l'àmbit de les ciències socials i naturals. A partir de l'anàlisi de les opinions i punts de vista dels nou participants que es troben dins el context educatiu, aquest estudi pretén il·lustrar les diferents concepcions sobre la idoneïtat de ChatGPT a l'aula, les perspectives pràctiques del professorat i la perspectiva del seu ús. En general, es manifesta la complexa relació entre l'ús de IA Generativa i el pensament crític en

edats on aquesta competència encara no està desenvolupada, i la necessitat imperativa de reinventar i revolucionar la manera com s'ensenya i s'adquireix el coneixement.

Paraules clau: Chat GPT; Educació primària; Intel·ligència Artificial Generativa (IAGen); Mestres; Pensament crític.

Resumen

Este trabajo de final de grado explora la relación entre el uso de la inteligencia artificial generativa, concretamente el ChatGPT, y el desarrollo del pensamiento crítico en la etapa de educación primaria. La relevancia de esta investigación viene dada a causa del desarrollo exponencial de la inteligencia artificial, por ahora sin límites establecidos, en muchos aspectos de la vida cotidiana. Este estudio entiende la educación como un aspecto clave, y, por tanto, es fundamental estudiar las complejidades que plantea a la hora de incorporarla en el ámbito educativo y analizar sus implicaciones más relevantes. Así pues, esta investigación se centra en reconocer los posibles retos y oportunidades asociados a la integración de Chat GPT en las aulas de primaria. Para ello, el estudio realiza entrevistas semiestructuradas con el objetivo de recoger diferentes perspectivas de cuatro grupos: alumnos de primer curso del grado universitario de educación primaria, alumnos de cuarto año del grado universitario, maestros de primaria y profesores universitarios expertos en el ámbito de las ciencias sociales y naturales. A partir del análisis de las opiniones y puntos de vista de los nueve participantes, este estudio pretende ilustrar las diferentes concepciones sobre la idoneidad de ChatGPT en el aula, las perspectivas prácticas del profesorado y la prospectiva de su uso en educación primaria. En general, se manifiesta la compleja relación entre el uso de IA Generativa y el pensamiento crítico en edades donde esta competencia todavía no está desarrollada, y la necesidad esencial de reinventar y revolucionar la forma en que se enseña y se adquiere el conocimiento.

Palabras clave: Chat GPT; Educación primaria; Inteligencia Artificial Generativa (IAGen); Maestros; Pensamiento crítico.

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Introduction

Artificial intelligence (AI) is revolutionizing the world as we know it, creating significant impacts and challenges within the educational field. However, talking about education in times of AI implies reflecting on the role of education in preparing people for a constantly changing world in which this technology will be present in all aspects of life. But as educators, are we prepared to take advantage of its potential to cultivate critical thinking in our students? Nowadays, most higher education students worldwide have interacted with ChatGPT, and according to Coeckelbergh (2023), cited in Garcia et al., (2023), such technologies are no longer merely means to an end; they also shape the end itself.

Therefore, education must now, more than ever, prepare individuals to navigate a world increasingly defined by these advancements. And at this point the role of critical thinking becomes crucial. Critical thinking, has been a subject of investigation for decades, and it remains as pertinent as ever. (Castellví et al., 2019) Despite lacking a unified definition, fostering critical thinking is essential for equipping citizens to remain informed, understand their global surroundings, and engage in thoughtful and informed actions. It is true that with rigorous use and a critical approach, these tools can be utterly useful. However, what happens to those who have not developed the necessary skills, abilities, or knowledge to use it properly? Yet in the current global context, it is worth questioning whether critical thinking programs have not been widely implemented in classrooms, or if they have, why they have not achieved the desired outcomes. (Castellví et al., 2019).

Furthermore, many issues associated with these technologies in educational settings already existed before the GenAI appeared (Peñalvo et al., 2023). Now, given its power, these issues can no longer be ignored. And on the other hand, it needs to be determined how swiftly can these tools be analyzed and integrated into teaching practices. In this sense, UNESCO adopted the Recommendation on the Ethics of Artificial Intelligence on November 2023. But what happens when a primary school student tells the teacher that they no longer need to learn because Chat GPT can provide the answers? This question, which I asked myself with some concern as I am preparing to be a teacher, has motivated this study. However, it focuses on primary education, as most researches this far have studied the topic in higher education.

By exploring this scenario, the thesis aims to explore the potential challenges and barriers faced by educators when incorporating generative AI tools in primary schools, to assess the

practical perspectives regarding its integration in teaching practices and analyze the prospects for the unpredictable advancement of its uses.

Theoretical framework

The impact of AI in education

The accelerated development of technology generally results in a growing knowledge gap in the curriculum, and traditional education often fails to provide children with the technological literacy they will need to succeed in the future (García et al., 2023). The Covid-19 pandemic initiated a sudden and unprecedented acceleration in the digitalization of teaching and learning. Because of that circumstance, society had to make an impressive digital jump. School leaders, teachers, and students had to rapidly adapt to a virtual classroom with online resources, synchronous and asynchronous teaching, and remote support (Harris and Jones, 2020). Teachers and students had to rapidly acquire technological skills in this way. Yet it is evident that the digital revolution has irreversibly changed the nature of schooling a few years after the epidemic started. The development of AI has advanced exponentially in recent years, with the creation of new groundbreaking Generator of Artificial Intelligences technologies that directly impact education (Tajik and Tajik, 2023). Becoming the newest global force, it holds the potential to completely transform and reinvent the way that education is taught and learned (Gilbard, 2023).

When talking about Artificial Intelligence involved in education, it needs to be clarified that there are many types, each of them, created with the goal of accomplishing different tasks. However, this thesis is going to focus on a specific branch of artificial intelligence called generative artificial intelligence (GAI) or (GenAI) which are systems designed to create original and creative content, such as images, music, and text.

Generative Artificial Intelligence (GenAI): Chat GPT

Despite this study acknowledges the existence of various types of Generative AI models, Chat GPT will be the center of attention of this research as it is the most well-known and widely used AI in its category. This model, developed by OpenAI, was one of the first to emerge in the market. According to Cepeda (2023), its increasing use can be attributed to its free access and availability to everyone. Over the past two years, Chat GPT has become one

of the most popular online platforms, with an estimated 281,000,000 searches every 30 seconds. Its name comes from an abbreviation for **g**enerative **p**re-trained **t**ransformer, and it is a natural language processing (NLP) model that generates human-like text responses using a variant of the popular Transformer network (El-Seoud et al., 2023). A new artificial intelligence technology that was made available in November 2022.

At present, Chat GPT is already popular to higher education students, as it can help with research and offer immediate solutions to complicated issues, making it a useful tool which looks for accurate and current information. But its complex advancements may just provoke new, but needed questions and answers about the future of teaching (Gilbard, 2023).

Proponents of GenAI in education highlight its ability to tailor learning experiences (Passi & Fox, 2021). ChatGPT's ability to create interactive games and activities can potentially spark curiosity and a love of learning in young students (Prensky, 2001). And if utilized properly, AI may be a useful tool for teachers and students. Additionally, Chat GPT can assist instructors in creating individualized lesson plans based on each student's areas of strength and weakness, enabling a more focused and successful educational experience (Ausat et al., 2023). Before calculators, the answer was frequently all that mattered; however, once calculators were introduced, it became crucial to demonstrate how you had solved the problem. Some experts have proposed that a similar thing could happen with academic essays, where they are now evaluated not only on what they say but also on how students edit and improve a text generated by an AI (El-Seoud et al., 2023). Furthermore, Gilbard, (2023) states that tools such as ChatGPT can present teachers with new pedagogical opportunities to move away from transmission teaching and begin to design more active, culturally relevant learning environments.

Yet, its implementation presents numerous challenges and risks, including ethical dilemmas, data privacy and security concerns, and an increasing dependence on technology (Liu et al., 2020). El-Seoud et al. (2023), defend that students' capacity to think creatively and independently may diminish over time due to its use. Moreover, students that rely too much on Chat GPT may lose interest in learning independently, which may eventually lead to a decline in the human intellect. Therefore, reliance on such technologies does not foster the kind of critical thinking and problem-solving abilities necessary for success in school and life. And, on the other hand, not all the answers provided by Chat GPT would be reliable

(Fijačko et al., 2023). Peñalvo et al. (2023), adds that generative artificial intelligence is extremely powerful and improving at a rapid pace, but it is based on large model languages with a probabilistic basis, which means that they don't have capacity for reasoning or understanding and, therefore, are susceptible to errors that need to be contrasted.

Despite the critics and concerns mentioned above, Chat GPT is an opportunity to engage more of our teachers, more of our educators in understanding the power and potential of technology. "We cannot put the genie back in the bottle", says TC's Ellen B. Meier, Professor of Computing and Educational Practice. (Teachers College, Columbia University, 2023). Furthermore, others contend that "The ban is a realistic policy reaction in the short-term, when we are uncertain about the tool's value and risks, but it is not a longer-term solution," exposes TC's Renhze Yu, Assistant Professor of Learning Analytics/Educational Data Mining (Teachers College, Columbia University, 2023). Who is encouraging his students to try Chat GPT themselves to explore potential uses. (El-Seoud et al., 2023b) agree on the idea and promotes teaching students to give proper and ethically correct instructions to AI rather than asking GenAI for a fabricated essay without any idea or thought in mind about how students should focus on the construction of outlines, templates, and instructions by using Chat GPT. Gilbard (2023), defends that same view, claiming that educators may not need to work against ChatGPT, but rather learn how to minimize the risks it introduces and welcome the opportunity to be critical of its use in education. Dwivedi et al. (2023), state that educators remain responsible for training the students to develop critical thinking. Which is essential for establishing a strong foundation for future learning. The paper also states that applications like ChatGPT can be used either as a companion or tutor to support, for example, self regulated learning, or as a way to pass exams without any effort, thus minimal, if any, learning. Nevertheless, El-Seoud et al. (2023), declare that as long as teachers keep making critical thinking and interpersonal connection a priority, GenAI may be a useful tool in the classroom.

Yet, as observed above, one of the biggest and shared concerns among professionals is the decline of critical thinking, defending that it is an essential and crucial competence to be acquired during primary education. However, what exactly is critical thinking and why its cultivation is vital during early education?

Critical thinking

In today's globalized, fast changing and information saturated world, the need for informed decision-making makes critical thinking skills a crucial asset for success in various aspects of life (Castellví et al., 2019). In their research, it is also argued that critical thinking enables individuals to evaluate information critically, identify biases, and make informed decisions about important social issues. Paulo Freire (1989), a renowned educational theorist, highlights the role of critical thinking in education. He strongly advocates for critical thinking as “fundamental to education for a free society?”. Furthermore, Freire believes that critical thinking empowers individuals to challenge authority, question the status quo, and ultimately, contribute to a more fair and equitable society. He emphasizes that education should not be about passively absorbing information but rather about a passion for critical thinking and self-directed learning. Additionally, Richard Paul (1984), highlights the importance of critical thinking in the classroom. Asserting that critical thinking is a “basic skill” that should be taught to all students. The author defends a teaching that fosters critical thinking through insightful questions and active engagement, and in addition defends critical thinking as an essential skill for success in school, work, and life in general. However, over the years, diverse authors agreed that this concept does not have a unique and truthful meaning, instead it held more than one view and perspectives that can be influenced depending on the context in which critical thinking occurs (Kahlke and Eva, 2018).

Epistemic currents of critical thinking

Nowadays, there are two main epistemic currents that aim to define such a complex concept. According to the study of Kahlke and Eva (2018), the conceptions or ways of understanding critical thinking can be categorized in the following ways:

The three main epistemic currents that have influenced critical thinking are the biomedical, the humanistic and eventually the social justice critical thinking. It needs to be claimed that gaining an understanding of these trends can help one gain perspective on the fundamental concepts and values of critical thinking.

- Rational critical thinking: This way of understanding critical thinking is mainly based on seeing it as a process that ought to be rational, logical, and systematic. Defenders of this approach stated that critical thinking is based on the ability to reason logically.

- Humanistic critical thinking: Instead, the following approach emphasizes the idea that critical thinking refers to the common good. Contrary to the rational model, it does not set aside emotions, since it considers them as vital and characteristic traits we have as humans. Therefore, there is no goal in denying them to act critically.
- Social justice oriented critical thinking: This last epistemic current conceived the rational view as too simple. Nevertheless, it agrees with the humanistic perspective and recognizes emotions as a part of critical thinking. Yet, it goes beyond, and it prompts the examination of the assumptions and prejudices established in their environment. In other words, it is perceived as a procedure for examining and resolving the ways in which society and personal assumptions restrict the variety of options and resources available to individuals and social groupings.

As it provides the most holistic and comprehensive framework for handling such a complex concept, social justice oriented critical thinking has been the term utilized to refer to critical thinking throughout this research. Since it challenges to think critically about the ethical, social, and political facets of thinking in addition to the logical and analytical ones. Therefore, it is an ideal approach to study the complicated and diverse effects of GenAI on critical thinking. On the other hand, this work seeks critical thinking as a social construction, which implies that the social and cultural context in which it is produced and practiced shapes it rather than making it a fixed or universal idea. Pointing out that people's ability to think critically can be influenced by the differences in values, beliefs, and norms between cultures.

ARTICLES

Article	Constructing critical thinking in health professional education
Approaches	When it comes to Health professional education, programs are required to instruct practitioners in the discipline of critical thinking. This study asks four distinct health professions to help provide more light on the concept of critical thinking as it impacts their practices. This empirical

	research claims that critical thinking lies in the flexibility with which it is conceptualized. On the other hand, it should be emphasized that the goal of this paper is to examine the disputes surrounding different perspectives in order to gain a greater knowledge of their respective qualities and the values that they are connected to, rather than to develop universal definitions of the complex concept of "critical thinking".
Results	The study explored how different health professionals understand critical thinking. The researchers identified three main perspectives: Firstly, the biomedical critical thinking emphasizes rationality, logic, and systematic thinking. Secondly, humanistic critical thinking emphasizes the common good and recognizes emotions as part of critical thinking. Finally, social justice-oriented critical thinking goes beyond rationality and humanism to examine assumptions and prejudices that limit opportunities. Thus, according to this paper, rather than being a single, universal concept or idea, critical thinking is actually a collection of different perspectives that might differ depending on the situation and the objectives of the individual or profession.

Article	Focusing on Teacher Education to Introduce AI in Schools: Perspectives and Illustrative Findings
Approaches	This empirical research explores teachers' perceptions of artificial intelligence (AI) and proposes a framework for teacher education to address the integration of AI into the school curricula. The main objective of the workshop was to train teachers to introduce AI in their prespectives schools.
Results	According to the results, the majority of teachers were aware of artificial intelligence and its increasing relevance in a wide range of fields. However, just a few educators claimed that they understood artificial

	intelligence well enough, while more than half of the participants agreed they were concerned about using AI in the classroom. The main issues were a lack of teacher preparation programs, the possibility that artificial intelligence might eventually supplant human educators, and the requirement to make sure AI systems are applied responsibly. On the other hand, the interviews emphasized these issues even more and gave more detailed examples. For instance, questions of the possibility that AI will foster segregation between those students who have access to AI learning resources and those who do not. On the other hand, professors acknowledged the potential advantages of AI in teaching despite the mentioned concerns. Furthermore, they viewed it as a tool that could help students improve their critical thinking abilities, personalize their education, and provide them immediate feedback. In conclusion, the results indicate a poor belief state in the potential of AI among teachers and the interest to explore peer teaching and game based approaches in the classroom to introduce AI.
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Article	An Empirical study on the influence of PBL teaching model on college students' critical thinking ability.
Approaches	In this empirical research, it is examined the impact of Problem-Based Learning (PBL) on the critical thinking ability of college students in China. The purpose of this study is to enrich the research into the influence of PBL teaching model on English critical thinking ability, and to provide some reference for improving the quality of English teaching in colleges and Universities. However, these studies mainly focused on the research of training mode of non English majors' critical thinking ability, and took English major students as the research object, combining the research of PBL teaching mode and students' critical thinking together choosing English majors as subjects is particularly scarce, so it should become the focus and direction of English teaching reform of the university in the future.

Results	Zhou used a mixed-methods approach, including a questionnaire, interviews, and English proficiency tests, to compare the critical thinking skills of 35 students who were taught using PBL to those of 39 students who were taught using a traditional lecture-based method. The results obtained claim that PBL can provide students with a more engaging and active learning experience, which can lead to better critical thinking skills. Therefore, improving the following three English critical thinking levels such as analysis, openness and fairness. On the other hand, PBL also encourages students to work collaboratively and to solve problems, which can enhance their critical thinking abilities. However, it needs to be pointed out that PBL did not improve the English scores of the students significantly. Finally, the outcomes of this empirical research suggest that PBL can be a valuable tool for educators who are looking to develop critical thinking skills in their students. Yet, educators need to be trained in how to design and implement PBL activities in order to maximize its effectiveness. And also keep in mind that it needs to be implemented together with other critical thinking instructions.
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Methodology

This study aims to explore the relationship between Chat GPT and the development of critical thinking in primary education. Thus, this thesis will use a qualitative methodology in order to explore the perceptions of nine participants across the educational scope. In order to obtain qualitative results, semi-structured interviews will be carried out to the following four interviewees' categories:

Participants	Educational background	Experience on the field
Martina	Student from the 1st year of the Primary Education Bachelor degree.	One year
Carla	Student from the 1st year of the Primary Education Bachelor degree.	One year

Joana	Student from the last year of the Primary Education Bachelor degree.	Four years
Laura	Student from the last year of the Primary Education Bachelor degree.	Four years
Dídac	Primary School Teacher (Tutor)	Eight years
Daniela	Primary School Teacher (Specialist in Special Education)	One year
Biel	University professor, expert on the field of didactics of social sciences.	Eight years
Vicenç	University professor, expert on the field of didactics of natural sciences.	Thirteen years
Arnau	University professor, expert on the field of didactics of science and Mathematics.	Fifteen years

To proceed, it is imperative to acknowledge that the participants names have been anonymized with the names appearing in the table above.

These four groups have been chosen with the aim of having a wider vision of the educational spectrum. Starting from the first year graders, who are supposed to be starting to acknowledge about education and its practices, and continuing by the fourth graders, who will already have experienced how this educational word actually functions and have a more established basis of knowledge. Following the primary school teachers, this group is already aware of how to manage a class and is more aware of the strengths and weaknesses of applying certain dynamics into the classroom. And finally the educators of future teachers/University professors, who are responsible to offer the necessary awareness, resources and abilities so the previous groups can feel comfortable and capable of applying all of that within a classroom. It is true that this knowledge and confidence can be subjective according to every person's personality or context, but this work is based on the mentioned general traits.

To continue, the interviews delve into their awareness and understanding of Chat GPT, how they see its strengths, weaknesses, opportunities and threats in regard to the student's critical thinking competence. The exploratory-descriptive nature of the questions allows analyzing the participant perspectives and obtain qualitative data regarding three main blocks: the adaptation of the Chat GPT to Primary School classrooms, teachers' practical perspectives and the future prospective the sample have.

To develop the practical part of this thesis, the work was divided into six steps. In the first place, the design of the questions, which were slightly modified according to each educational background. Afterward, the selection of interviewees was done, mainly through contacts and sample scope. When it comes to the undergraduate students, it has been done through sample size. Contrary, it needs to be pointed out that the selection of the last two groups of the participants have been selected taking into account the following criteria: Firstly, the Primary school teacher called Dídac is a tutor that has been working as a teacher for eight years. Instead, the other teacher is specialized in special needs and 2023 was the first year that Daniela has been teaching in a school. Therefore, there are more chances that she is more used to working with this GenAI tool rather than him. Secondly, the three University professors are experts in the fields of didactic of sciences at UAB. However, while the first one is specialized in natural science, the other one in specialized in social sciences. The third one approach the mathematics field. Since those branches within the science field defend opposite conceptions about topics such as Critical Thinking, it is of interest to undertake an analysis and a comparison of their respective responses. In regard to the development of the interviews, five were carried out online, while the others were developed in person. Both ways were satisfactory, and allowed a proper data collection. It needs to be said that some were conducted with more time than others. Generally, the ones with the University professors took more time since they were experts on the field and showed awareness of the situation. However, all the meetings lasted around one hour and a little bit more. The fact of realizing semi-structured interviews was utterly positive since it allowed to guide the conversation into different topics with each of the participants, eventhough they were found in the same educational background. Fact that grant a wider and deeper vision of the topic. Afterward, it needed to be done the transcription of the interviews, and to do so, a grid was used in order to sort the data collection into three main categories. Since the interviews were done in Catalan, the native language of the speakers, the results ought to be translated in the research speech. Arriving to the end, the obtained the results were exposed and discussed taking into account the theoretical framework theories. The last part of the thesis was to come up with the conclusions, when all the previous points were discussed.

Results

Based on the interviews conducted with the nine participants, the following results have been extracted, which are divided into three main blocks: I) Suitability of Chat GPT in primary education classrooms, II) Educator's Practical perspectives, and III) Future prospective.

I) Suitability of Chat GPT in primary education classrooms:

Firstly, with regard to the suitability of this tool in primary school classrooms, the vast majority of participants (6/9) consider its use inappropriate. One of the most shared reasons is the concern teachers have about the possible loss of critical thinking as a result of the use of Generative Artificial Intelligence. Daniela expresses that she is not only worried about this loss in terms of the students, but also regarding teachers and society in general. Furthermore, Dídac claims that the use of Chat GPT could further accentuate the “law of the minimum effort”, which he considers a currently serious problem. On the other hand, professor Biel deems it appropriate to use Chat GPT in schools only if there is prior reflection and evaluation to determine whether it makes sense to use it within the given educational context. However, he does not consider it a priority in classrooms. Additionally, together with professor Vicenç, they emphasize the potential inequality that Chat GPT can cause between those students who have access to technologies or more knowledge about different AIs compared to those who do not. Finally, (4/9) participants mention at some point in the interview a certain fear of a growing dependence on this tool and the use of screens.

The two participants who do not consider its use inappropriate in primary classrooms, compare the use of Chat GPT with the use of the internet at schools. They defend that this tool is here to stay and that there is no point in banning its use. On the contrary, it is essential to coexist with it and to maximize its benefits, which, according to professor Vicenç, overcome the disadvantages.

In fact, the expert on the field of social sciences, Arnau, claims that the current crisis being surrounding the use of AI Gen in classrooms is similar to the one that occurred a few years ago with the introduction of internet and computers in schools. In contrast, the interviewees who are more against than in favor of the presence of tools such as Chat GPT in the classrooms, consider that their use could limit the ability of students to think critically since, unlike internet, students do not need to contrast, or analyze the information that the AI gives them. The teacher Daniela maintains that unlike internet, the GenAI offers all the information

chewed up. It is also believed that students need to learn to search for, evaluate and synthesize information for themselves and Chat GPT can deprive them of this opportunity. However, some of the participants (Joana, Vicenç, Biel and Arnau) think that all this is also possible to do through AI, but it is needed to know how.

Despite having different conceptions about its use, all participants agree on the fact that the factor that should be taken into account when limiting its use is that students are of an age where the content that AI facilitates, is already achieved. The teacher Dídac adds that it is essential to have an age at which students can use it with some judgment. It is for this reason that the majority of interviewees concede that if they were to use it, it would be most appropriate in higher education. Yet, first-year student Martina considers that 6th grade could be a good course to introduce in classrooms with the aim of preparing them to understand its working and enabling them to use it appropriately in secondary education (ESO).

Additionally, it is important to highlight the participant's views on teachers using Chat GPT within the classroom. Vicenç affirms that whatever the Artificial Intelligence do, can be perfectly done by a teacher, but there is significant difference in terms of time. The student of the last year, Joana, adds that it can be a very beneficial tool for dealing with diversity in the classroom in a more equitable and personalized way.

II) Teacher's practical perspectives

In the next section, the practical perspective of the educators is analyzed, putting a special emphasis on how teachers and future teachers would use it in primary school classrooms. So, this second block is based on the answers obtained through three questions: "If you had to use Chat GPT in your classroom, how would you do it?", "What do we tell a student if she/he tells the teacher that they no longer need to learn something because Chat GPT can provide the answers?". And to finish, "Do you think that the emergence of this type of artificial intelligence should make us reconsider how students are assessed ?". Here are some key points to consider when contrasting the different opinions received:

Teacher's training

To begin with, it should be noted that all participants concur on the need for teachers to learn how to use this tool efficiently, since many of the teachers and future teachers do not feel ready right now to teach how to use it properly or to give an example to students of how to

use it. The vast majority (6/9) participants propose training for teachers, in the same way they had to do with ICT, inclusion and the new curriculum training programs, among others. Thinking that these trainings should provide the knowledge and skills necessary to integrate Chat GPT into their teaching practices appropriately and also enable them to maximize its benefits and ensure its effective implementation both within and outside the classroom. In addition, the student Laura emphasizes that this knowledge will make it easier to detect an abusive use of this tool.

What and how should we teach?

Secondly, almost all the participants defend the urge of a more competencial and communicative approach to learning. The teacher Dídac explains that currently, with the new curriculum of the Generalitat of Catalonia, the content does not focus that much on knowledge, as on the development of this knowledge. In other words, it is no longer so important to have knowledge, but rather to acquire the skills, tools and strategies to solve the day-to-day life of the students in an agile way. Participants such as the teacher Daniela, the professor Biel and the 1st grade student Martina share this thought. Besides, the professor Vicenç highlights the importance of a bidirectional dialogue between the Chat GPT and the students. He also points out the responsibility of teachers to make sure that the students understand the questions they ask to the GenAI, and they never settle for the first answer they get. In addition, he proposes to promote more immersive and real learning experiences, using AI as a collaborative tool. Likewise, the 4th year student Joana proposes tasks that stimulate students' reflection and critical thinking and at the same time pose questions that Chat GPT cannot answer. Professor Biel explains that if the questions we ask the students can be easily answered by Chat GPT, it means that they are poorly thought out. Lastly, professor Arnau argues that this type of Generative AI does not have an opinion of its own, therefore the thought contents should be directed towards the exposition of opinions, and taking a position with regard to controversial issues. Furthermore, he adds that, now, more than ever, teachers must strive to “problematize” the thought content, with the optimal aim of making them think.

Role model

On the other hand, two of the participants, Vicenç and Laura consider essential to use this tool through the role model methodology to start using it in the classrooms. In addition, these two participants also agree to use it to compare the final result of a work that the students

have carried out, with the answer gotten from the AI. Professor Biel believes that with the incorporation of AI in the classroom, he would dedicate much more time to thinking about the final product proposed by the AI, rather than doing the writing itself. And therefore, decide what do we keep from one, and what from another, and to justify the reason of this choice.

Spend time thinking about the consequences of using Chat GPT

In the case of the Daniela, the teacher explains that she would propose reflections and activities for the students to explore the positive and negative aspects of Chat GPT, as well as its possible impacts on human thinking capacity. Subsequently, she would also opt for the role model methodology mentioned above. On the other hand, 3/9 participants highlight the importance of showing to the students that Generative Artificial Intelligence also makes mistakes, and it is in both teachers and student's hands to be able to detect such mistakes. Biel explains that according to the basis of science, Chat GPT is not a reliable source, and Vicenç adds that teachers must avoid this "blind faith" that students might have in Artificial Intelligence.

The value of personal learning towards technology

Some of the teachers also mention the dependence, at a social level, that these tools generate on the instant knowledge or the value of personal learning compared to what the artificial intelligence knows. When the participants are faced with the situation of what to tell a student if she/he tells the teacher that they no longer need to learn something because Chat GPT can provide the answers, there is a general tendency to blame the educational system for this happening. The 4th year student, Joana, argues that perhaps if education was more innovative and motivating, and it would stimulate students' thinking skills through meaningful and provocative tasks, perhaps a student would not think of this question. "If the students do not find the meaning of what they are learning, they will obviously not want to do the tasks that are asked of them. But since they have to them, they will want to do them quickly because they do not find the meaning to do so". Regarding this context, Arnau suggests setting up more complex and socially relevant tasks in order to encourage critical thinking. The teacher Daniela emphasizes the importance of helping students understand that expanding knowledge requires learning through mistakes. She believes that this tool can not be ignored, but relying on it excessively, as it is accessible whenever and whatever, could hinder the ability to formulate meaningful questions, even to Chat GPT. As she puts it, "We could know

everything, without knowing anything.” On the other hand, the interviewee Vicenç underlines the complexity of determining what is essential to learn and what can be consulted externally. And how it is part of the teachers’ task to justify and explain to students the importance of the knowledge that is transmitted to them. Other participants, such as Laura, they point out the need to make students understand that thinking gives the power of freedom. In addition, Martina adds to this idea the importance of not being totally dependent on technology and, on the other hand, valuing the richness of human thought. Finally, Biel underlines the need to change the perception of learning and redefine its purpose, both in the educational and social contexts.

Assessment

Concerning evaluation, (8/9) interviewees reflect on the fact that the emergence of Generative Artificial Intelligence, such as Chat GPT, should motivate a review of how it is the assessment done within schools. But to begin with, the professor Arnau defines the assessment as “a reflection of how we teach”. The student Joana points out that in general, it is still evaluated in a very traditional way. And share with Laura the opinion of how the evaluation should be focused on the procedure and not merely on the final product. The 1st degree student Martina suggests alternative assessment activities to exams, such as open debates or projects that emphasize the process and evolution of learning. She believes that in this way, the inappropriate use of AI would be avoided or reduced. The other student from 1st year, named Carla, believes that opting for this type of assessment could help students better understand the role of Chat GPT as a support scaffold. Ultimately, Vicenç concludes that the assessment needs an extensive and deep review both with the appearance of AI and without, but it is true that this need is now much more accentuated.

III) Future prospective:

In this third and last block of results, the future prospective that participants have about the use of Generative Artificial Intelligence in primary classrooms is studied based on the following questions: How do you see the relationship of AI (Generator of text like Chat GPT) and education in the future? Is it unavoidable? Do you think that the use of GenAI in educational contexts generates ethical dilemmas? Which ones? What is your position? From there, the interviews show a wide variety of opinions about the relationship between AI and education in the future.

Chat GPT's inevitability in the future

While there is a general agreement on the unavoidability of this relationship, there is a wide diversity of perspectives on its impact and implications. Carla, for example, justifies its inevitability by arguing that AI is already present in many areas of everyday life. In fact, Martina believes that AI is likely to play a more prominent role in the classroom in a close future. Professor Biel shares this thought, as he opines the Generative AI is a tool that is close to the skills students work on in the classroom. Additionally, Martina also believes that due to the accelerated rhythm at which these technologies are being developed, the interaction between AI and education will keep advancing. Actually, she notes that it does not seem to be any chance of stopping it and predicts it will continue growing. “It has come to stay” says Biel. The 4th year student, Joana, not only believes that it is inevitable, but the current way in which teaching and students learn will change due to the emergence of tools such as Chat GPT.

On the other hand, professor Vicenç compares Generative AI to electricity, in terms of impact and changes in society. Another example is Arnau, who compares it to significant historical events, such as the Neolithic or the industrial revolutions. Furthermore, he claims that this tool is changing society significantly since its beginning, and this worries him about its accelerated growth without clear limits. Although they believe that this model is unsustainable due to the demand it entails, they firmly hold that we will have to learn to live with it.

On the contrary, Dídac alert on the risks of managing this tool and the need for responsible use. Otherwise, Joana suggests the implementation of restrictions similar to those made on topics such as pornography, in order to monitor its use in education. Other negative aspects regarding future prospects are presented by Daniela, who considers that this inevitable relationship can lead to a lack of originality and imagination in students. And it also warns about the dangers of encouraging an excessive use of technology. For instance, she recommends banning or restricting its use in educational settings as a possible measure. However, Carla does not think it is necessary to perceive Chat GPT as a threat, but as an opportunity to adapt and improve teaching methods, approaching a project-based model.

Ethical dilemmas

When discussing ethical dilemmas, Laura suggests that this topic arises as naturally as in any subject that intersects with education. However, several participants concur with what types of dilemmas the use of these tools can generate in primary school classrooms. In the first place, interviewees highlight the concern of reaching the point where Generative AI content cannot be distinguished from an original text. Secondly, Vicenç and Biel stress that it can reinforce social inequalities and also warn about the risks of discrimination related to classicism, racism, and gender. Martina adds that Chat GPT does not take into account ethics or any kind of filter in its answers. A fact that raises questions about ethical responsibility in its use and the need for human supervision. On the other hand, Joana exposes today's societal tendency to seek immediate gratification and how this can result in an over-reliance on AI to complete educational tasks. At this point, professor Arnau, again emphasizes the need to provide students with tools to develop critical thinking in order to avoid the indoctrination of generative artificial intelligences.

Prospective

After all these reflections, some participants draw the following conclusions on how to face and deal with Chat GPT in primary school classrooms. Firstly, Joana states that it is impossible to completely eliminate the use of Chat GPT, but proposes to educate students on how to use it responsibly, encouraging critical thinking and reflection in learning. It is for this reason that Martina considers it essential that they prepare teachers for this scenario. In this way, students will be able to learn to use it effectively, integrating it as another tool in their educational process and encouraging critical thinking and ethical responsibility. In order to make this possible Biel refers to the great importance of political action to ensure an equitable and ethical use of AI in education, which ensures access for all and minimizes unfair biases and lack of reliability.

Others, like the Laura and Daniela, believe that the best is to avoid using it as much as possible, and above all, work in a way that makes it not useful for students to use Generative AI. Instead, learning through reflections, debates, manipulation, etc. Although if it used, the key is to know how to use this tool as a support for learning, but not to use it to replace it. "It's a double weapon" concludes the teacher Daniela. Additionally, Martina also believes it is important to take advantage of its learning advantages, but without delegating everything to the Chat GPT. The other student from 1st year, Carla, points out that "if society evolves, so

should education”, with the aim of giving this knowledge to children. In response, professor Arnau reaffirms the importance of critical thinking to face this evolution, which he believes should have been encouraged years ago. Finally, Biel explains that the appearance of these tools is partly disturbing, because “it forces us to rethink things that may not work as well as we thought”.

Discussion

Although all participants are aware of the impact that Generative Artificial Intelligence is having, especially in educational contexts, I have been able to observe that University professors adopts a less reticent view on the use of Chat GPT in primary classrooms in front of the other participants. This situation can be influenced by the fact that they present an extensive experience and familiarity with AI, therefore, tend to adopt a more positive outlook on the integration of tools like ChatGPT in primary classrooms. They emphasize the potential benefits and the importance of a responsible use, contrasting with the general skepticism expressed by other educational backgrounds. Yet, the study shows that most of the participants do not consider its use necessary or accurate for primary school classrooms. It is true, that they all share certain fears due to GenAI’s exponential and limitless growth. Nevertheless, those who may have had more contact with this tool are more open to seeing it as a supportive scaffolding tool, and agree that given the accurate conditions, it could be considered as a learning opportunity.

What is true is that this has just begun and that it should be regulated. While some consider a regulation based on the total prohibition of its use in educational areas, others are more receptive to incorporating it into the classroom. Regarding the first opinion, which is a minority among participants, TC’s Renhze Yu, expose that this measure could work as a realistic policy reaction in short-term, but it is certainly not a long-term solution. On the other hand, the ones willing to use it, consider essential to understand its operation and to become familiar with the tool, and both ungraduate students and primary school teachers contemplate as essentially a teacher training program in order to effectively integrate ChatGPT into the classroom. This line up with the emphasis on teacher agency and digital competence, highlighted by García et al. (2022). It should be noted that University teachers do not mention these trainings, a fact that is probably affected by their experience or familiarity with AI

given that it is much more present in University than in primary schools, and both of them have done several researches about it.

Another aim the training should have is to solve or reduce some of the fears shared among participants. For instance, the fear that the generated answers from Chat GPT could reduce students' need to analyze information, evaluate sources, and form their own conclusions. Which is supported by El-Seoud et al. (2023), when exposes that students' capacity to think creatively and independently may diminish over time due to the use of GenAI. Furthermore, the study highlights the risk of promoting the “law of minimum effort,” where students might rely too much on Chat GPT to complete tasks without engaging in deeper learning. Shaaban (2023), share this concern, emphasizing the need for responsible use of AI tools to avoid plagiarism and ensure real student learning. Additionally, El-Seoud et al. (2023) claim that as long as teachers keep making critical thinking and interpersonal connection a priority, GenAI may be a useful tool in the classroom, despite some people's concerns that technology-dependent pupils would be produced by AI like Chat GPT. Finally, the potential inequalities between students with varying access to technology and the increased dependence on screens were also identified as significant concerns. These issues require careful consideration and strategies to ensure equitable access.

On the other hand, despite the mentioned concerns, some participants acknowledged the potential benefits of Chat GPT, particularly in dealing with classroom diversity. As suggested by Vazhayil et al. (2019), The tool can provide individualized support and scaffolding for students who struggle with traditional learning methods. Moreover, Ausat et al., (2023), defends that Chat GPT can assist instructors in creating individualized lesson plans based on each student's areas of strength and weakness, enabling a more focused and successful educational experience.

Furthermore, the study emphasizes the importance of a more competency-based methodology where Chat GPT can be used and understood as a collaborative tool to enhance creativity, problem-solving, and communication skills. Which adjust with the perspectives of Lim et al. (2023), Pedró et al. (2019), and Gilbard, (2023), that considers that ChatGPT can present teachers with new pedagogical opportunities to move away from transmission teaching and begin to design more active and socially relevant learning environments. Moreover, the study proposes tasks that stimulate reflection and critical thinking, encouraging students to question

the information provided by Chat GPT and develop their independent analysis. This is crucial to ensure that the tool does not hinder the development of critical thinking skills, as emphasized by Castellví et al. (2019).

In addition, this thesis does a reflection on the assessment. The majority of participants agree that if the world and technology evolve, education must adapt, particularly in fostering critical thinking, which is now more vital than ever. Nowadays, educators face the challenge of defining the content that students really need to learn, especially since GenAI can provide easy and concrete access to external information. Furthermore, the way of assessing students' understanding needs to change, and it should focus more on how well they can apply the knowledge rather than just memorizing facts. Some experts have proposed that a similar thing could happen with academic essays, where they are now evaluated not only on what they say but also on how students edit and improve a text generated by an AI (El-Seoud et al., 2023).

Furthermore, the study highlights the importance of showing students that AI can make mistakes, promoting responsible use and critical evaluation of information generated by the tool. Peñalvo et al. (2023), supports this idea that generative artificial intelligence is extremely powerful and improving at a rapid pace but at the same time they are susceptible to errors that need to be contrasted.

The study also acknowledges the inevitability of AI's role in education but also raises concerns about the potential for the content generated by GenAI to become indistinguishable from original work, reinforcing social inequalities and discrimination, and lacking ethical filters. These concerns are represented in the literature by Lim et al. (2023), who highlight the need for critical thinking and responsible use of AI tools. Moreover, it needs to be highlighted the fact that most of the mentioned problems were already present in the educational field since a long time ago, but due to the GenAI, now are even more accentuated. (Gilbard, 2023) supports that IA's complex advancements can also provoke new questions and answers about the future of teaching.

Conclusion

After conducting a comprehensive theoretical investigation and application in practice of the work's foundations, the thesis proceeds to sort and determine the most significant conclusions that emerged along the research.

To start, the initial motivation behind the study was a concern regarding a situation, that given the current circumstances about the AI rapid development, educators could face in a close future. The question itself was what to respond to a primary school student in case they say that they no longer need to learn something because Chat GPT can provide the answers. It is true that the integration of Chat GPT in primary education classrooms presents a complex landscape, as revealed in the findings and discussion of this study. However, by exploring the perspectives and opinions of the participants regarding the suitability, the practical implications and the future prospects, several understanding and awareness of the topic emerged.

Firstly, the majority of participants expressed concerns about *Chat GPT's application* in primary schools classrooms. The most common fears were about the possible decline in abilities such as critical thinking, creativity and originality, among others. Furthermore, the aggravation of the "law of minimum effort," and inequalities in technology access. A minority, on the other hand, thought of Chat GPT as a tool similar to the internet, resulting in its use in educational contexts, unavoidable. On second place, regarding the *practical perspective* of the different educational members, it was emphasized the imperative need for training programs for teachers to integrate the use of tools like Chat GPT into their teaching practices effectively. Moreover, participants recommended a more competency based approach to learning and teaching, pointing out the importance of fostering critical thinking. Strategies such as promoting a bidirectional dialogue between the students and the GenAI, carrying out activities that prompt reflection and exposition of their opinions rather than merely copy or memorize were pointed out. Furthermore, participants agreed that the more traditional the methodology of the school is, the less advantages can be given from GenAI. Finally, approaching *the future prospective*, despite the total agreement on the inevitability of GenAI integration in education; while some of the participants highlighted the potential benefits of Chat GPT in enhancing classroom diversity, facilitating personalized experiences and training for a technological future, others shown concerns about ethical dilemmas, social inequalities, the necessity of policymakers to act in front of this new reality, and the negative consequences that can arise from getting used to its use in our daily life.

Coming back to the initial question, this study can not provide a unique response. It is true that is a complex issue that requires further research, particularly in the early ages. However,

it is seen that critical thinking is the most affected competence that may be hindered due to the use of artificial intelligence, but at the same time it also appears to be the most effective solution to navigate this new and growing technological reality.

Eventhough it is not common yet to deal with this IA tools in primary schools, if they are compared with the use of internet some years ago, as some experts did, it is easy to recognize that nowadays they are using it often. Shouldn't education start taking action to be ready to face these imminent changes? On the other hand, possible measures were underscored, among them, avoiding it within schools. Which might be a short term solution, but it is avoiding a present and a future reality. The study shows that is often to perceive Generative Artificial Intelligence as a thread, probably because of its newness, its undefined limits, and the lack of training educators have to affront this complex situation effectively. Nevertheless, this situation should be seen as a decisive moment for society and education to asks themselves aspects that are not working out as they should. Such as the development of critical thinking skills, the assessment of knowledge and competences, and to discern between what is primordial to learn and what can be externally consulted. The fear of becoming less intelligent or retaining less information is understandable. However, reflecting on how many phone numbers, birthdays or appointments are known by heart, compared to the past. Illustrates how evolution changes our cognitive habits. Thus, the introduction of Gen AI, as well, can be seen as an evolution. This thesis does not claim that this evolution is the right direction or the most beneficial. Actually, it is not necessarily good or bad in itself. But it is on us, as teachers, students, parents, members of society, to foster a proper use. And again, the best way to approach this new reality is being critics.

Future investigation should seek if is it possible that AI develop critical thinking instead of thinking for us, and how to do so. Additionally, studies should focus on the development of training programs about Generative Artificial Intelligences for educators to approach its use successfully. Finally, it is essential to reformulate assessment methods and tools to ensure that the essence and the pleasure of learning remains significant.

Limitations of the study

One limitation identified in the development of this study is that eventhough the study aimed to approach the different points of view from the educational spectrum, the sample of the study is still little. Fact that can affect that the findings do not generalize well beyond the

sample studied, limiting the applicability of the research. Furthermore, another limitation of this study is the lack of gender balance in the participants. The selection process generally relied on convenience sample size, utilizing contacts with the necessary professional profiles. Among the bachelor students, all participants were women, likely influenced by the fact that the majority of students in the education faculty are females. Regarding primary education teachers, the selection was done trying to foster a more balanced gender representation. However, all university professors in the sample were men, basically due to the fact that two of them had been my professors during my studies at the University. Although this study does not present a large sample size, future research should place more emphasis on gender perspective to assess its impact on the results.

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Annexes

The impact of artificial intelligence in the development of critical thinking in Primary Education

A little bit about you...

1. Com et descriuries amb una paraula?

Motivat

2. Què vol dir ser mestra per a tu?

Acompanyar en l'ensenyament. Però acompanyar malgrat tot.

3. Quants anys has exercit aquesta professió?

7 anys: (4 anys sent mestre a primària i 3 anys a l'ESO)

4. Explica'm una mica sobre com has arribat fins a la teva posició actual (Formació, especialització...)

Ell va fer la carrera de nanociència i nanotecnologia, però va descobrir que la investigació no era el seu àmbit, i volia fer ciència en un altre context. A partir d'aquí, s'endinsa en el món de l'educació barrejant el lleure i la ciència. Participa en el projecte de l'Innovamat mentre està a l'aula fent mitja jornada. L'any passat va fer oposicions i ara té una plaça a un institut on està fent jornada completa. A més, fa sis anys que comença a la universitat com a didàctica de la ciència i les mates.

AI within Primary Education

5. Saps què és la IA? Has sentit a parlar de Chat GPT? Sí, en fa ús.

6. Creus que s'hauria d'utilitzar a l'escola? La fas servir?

Creu que es pot o que podem arribar a trobar un espai on tingués sentit fer-lo servir a l'escola. Pensa que amb molta reflexió al darrere i ben pensat pot arribar a tenir sentit fer-ne ús, si no no. Pels docents sí que la recomana per coses més burocràtiques, però no ho considera una de les necessitats més rellevants a l'aula.

7. Creus és el seu ús és adequat (o no) per tots els cursos d'EP?

Tota eina tecnològica ens fa avançar uns passos mentalment. Ens avança feina i hauríem d'assegurar que aquesta feina que ens està avançant ja està assolida, és llavors quan en podem fer un bon ús. Aleshores ell recomana fer-la servir a partir d'una edat on tot allò per què la fan servir ja estigui assolit. Considera que aquest seria el seu límit.

D'altra banda, considera que inevitablement ens farà més ximpls. Si entenem aquest terme com a tenir menys capacitat de memorització de la qual tenim ara. És evident que ens farà feina i deixarem de fer-la, però la pregunta és quina altra feina farem en aquest temps. Això pot derivar a què dediquem més temps a pensar què volem dir, que no pas en escriure el mateix text. És a dir, dedicarem més energia en reflexionar el que estàs escrivint més enllà del fet d'escriure'l.

8. Si l'haguessis d'utilitzar, com ho faries? Creus que és una font fiable?

Si en fes ús destinaria molts temps a la reflexió del producte final que la IA proposa. Amb què ens quedem d'un (text propi) i amb què d'un altre (generat per la IA).

Com a font no ho és perquè no passa els barems que a la ciència considerem fiables, ja que no cita les dades. És una base de dades fiable, però si no saps l'origen no ho pot ser. Tot i que ara

ja podem començar a mirar d'on bé la informació, dona molta informació falsa, fal·làcies argumentatives... Arribats a aquest punt, hi haurà un moment en què hi haurà aquest perill i el gran repte de la humanitat serà transmetre la veritat.

9. Com veus la relació de la IAGen i l'educació en el futur? És inevitable?

Considera que la relació és inevitable atès que és una eina propera a les habilitats que el nostre alumnat treballa a l'aula. És totalment obvi que ha vingut per quedar-se i haurem de veure quin encaix té. No és aliena a l'educació i un cop més, l'escola va tard en entendre com funciona i com l'introduïm a l'aula. Expressa que haurem de plantejar una relació amb ella que no sap com ha de ser.

10. Creus que l'ús de la IAGen en contextos educatius genera dilemes ètics? Quins?

Quina és la teva posició?

Genera i generarà perquè qui tingui accés tindrà un avantatge. Hi ha un biaix pels rics. Si són gratuïtes és perquè tenen tota la nostra informació, però arribarà el moment en què deixarà de ser-ho. Aleshores, la pregunta és encara més complexa. Haurà d'entrar a l'aula? Ja que és l'únic moment que no hi ha diferències socials. Si no ens posem al dia els pròxims 20 anys tornarem a tenir desigualtats socials com n'hem tingut fins ara amb l'ús dels ordinadors. A més, genera problemes ètics relacionats amb els biaixos com el classicisme, el racisme, el gènere... A més, Argumenta que, si aquesta eina és privada i amb ideologia privada això tindrà unes conseqüències clares i aquí hauria d'entrar la política i garantir l'ús per a tothom. A més hauria d'establir un control objectiu per tal de garantir que hi hagi el mínim de biaixos possibles, per tal que la informació que proporciona sigui certa i fiable.

11. Què li diem a un nen si ens diu que no li cal saber alguna cosa perquè ja li diu el Chat GPT? Creus que és possible motivar a tothom?

Davant d'aquesta situació ell creu que cal canviar la mirada. El Chat GPT ja ho sap, i tu? Explica que en els últims anys s'ha vist accentuat aquest discurs de l'aprenentatge sense raó

de ser. Que es podria traduir en un simple: “Millor aprendre així que no aprendre”. Per acabar, destaca que en aquesta societat no està clar que saber importi.

12. Creus que l'aparició d'aquest tipus d'intel·ligència artificial ens hauria de fer replantejar com s'avalua a l'alumnat?

Explica que si hem d'aprendre per aprovar un examen, aquell aprenentatge es converteix en absurd. Ell defensa que aprendre vol dir molt més que un examen, és molt més profund i és el que ens permet viure amb dignitat. El discurs l'hauria de fer entre tota la societat i és que aprendre ens importa i t'importa. El motiu/sentit pel qual estem a l'aula hauria de canviar, però tota la societat hauria de veure-ho i el fi no hauria de ser ni l'examen ni la qualificació. Si estàs plantejant un examen que el Chat GPT pot treure un 10 vol dir que està molt mal plantejat. Acaba fent una reflexió on s'exposa que si ens molesta l'aparició d'eines com el Chat GPT potser és perquè ens obliga a replantejar coses que no estan funcionant tan bé com ens pensem.

The impact of artificial intelligence in the development of critical thinking in Primary Education

A little bit about you...

1. Com et descriuries amb una paraula?

Motivador

2. Què vol dir ser mestra per a tu?

Opino que vol dir entendre la diferència entre ensenyament i aprenentatge. I d'altra banda, saber generar contextos perquè s'apregui.

3. Quants anys fa que exerceixes aquesta professió?

Des del 2011, és a dir, fa 13 anys.

4. Explica'm una mica sobre com has arribat fins a aquesta escola... (Formació, especialització...)

Ell fa la carrera de física i després va fer el CAP per ser mestre de l'ESO, com a pla alternatiu. Quan va descobrir que era la didàctica li va encantar i va fer la Tesi doctoral, i el màster de recerca.

AI within Primary Education

5. Saps què és la IA? Has sentit a parlar de Chat GPT?

Sí, tot i que en el seu debut, no s'esperava que tingués una repercussió tan gran. El Chat GPT va pujar molt seriosament, explica. Li va obrir els ulls a diverses "misconceptions" que no s'havia plantejat fins al moment. Amb la seva aparició s'ha adonat que hi ha coses molt simples que ara per ara tenen molta més importància. I ens fa plantejar cap a on anem? Veu el trencament entre la realitat i la ficció i era una cosa que considerava encara molt llunyana.

6. Creus que s'hauria d'utilitzar a l'escola? La fas servir?

Raona que segons la llei, no poden utilitzar aquesta eina sols si són menors de 13 anys. Així i tot, creu que és una eina molt potent pels mestres a l'hora de dissenyar i elaborar materials. A més opina que pràcticament tot el que la IA pot fer un mestre, la IA ho pot fer igual. L'única diferència és el temps.

En cas que en fes ús ho faria com a copilot, és a dir, el faria servir amb els alumnes davant seu per tal que els alumnes que sàpiga que existeix. Això sí, sempre sent els profes qui li facin la pregunta. Com a element de suport puntual el faria servir a cicle superior. I destaca tractar el tema amb naturalitat. Ell, per exemple ho compara amb buscar a Google o YouTube. D'altra banda, sí que argumenta que no s'haurien de fer tasques mai a casa on es pugui utilitzar. Per acabar, exposa que els beneficis que suposa són molt més grans que els seus inconvenients.

7. Creus és el seu ús és adequat (o no) per tots els cursos d'EP?

No, només per cicle superior. Com a molt aviat 4t. Si són capaços de llegir frases senceres, si no no té cap mena de sentit.

8. Si l'haguessis d'utilitzar, com ho faries? Creus que és una font fiable?

Ell personalment, enfocaria el seu ús a la correcció o com a suport per contrastar el que nosaltres ja hem fet. També és important destinar temps a fer veure moments en què el Chat GPT, i altres s'equivoquen. Ell creu que a partir del role model es podria utilitzar a totes les assignatures de primària. Destaca també la importància del diàleg bidireccional, saber el que li preguntem, i mai conformar-nos amb la primera resposta que ens dona. En referència a la credibilitat que pot tenir aquesta eina, diu que les respostes poden ser molt útils, però que no hem de tenir una fe cega.

9. Com veus la relació de la IA (Generadora de text com Chat Gpt) i l'educació en el futur? És inevitable?

Ell opina que és inevitable, com l'electricitat. Ho compara i diu que estan al mateix nivell, pel que fa als canvis que impliquen. De fet, considera que provocarà canvis molt més notables que internet, fins a arribar al punt de fer-nos qüestionar el mateix concepte de la humanitat. I es planteja qüestions com, en quin moment ens fiarem més de la IA? O la no contemplació els costos energètics que aquesta suposa.

**10. Creus que l'ús de la IAGen en contextos educatius genera dilemes ètics? Quins?
Quina és la teva posició?**

Creu que es pot arribar a conviure amb ella sempre que es faci un ús racional explícit, amb uns objectius clars i modalitzadors. El dilema ètic entra en el moment en el qual es vulgui substituir la feina del mestre. D'altra banda, també menciona que reforça els estereotips.

11. Què li diem a un nen si ens diu que no li cal saber alguna cosa perquè ja li diu el ChatGPT? Creus que és possible motivar a tothom?

Saber establir el que és essencial i el que no és molt difícil. En un temps infinit seria ideal que els alumnes ho memoritzin tot. Però mai no podrem saber-ho tot. Així doncs, quin és l'equilibri entre allò que hem de saber i allò que cerquem amb fonts externes és complicat. Com a mestres hem de ser capaços d'entendre per què és important, i saber-ho justificar. Aleshores, és important. Creu que l'educació està mal plantejada atès que sol centrar-se en tipus, parts i noms.

12. Creus que l'aparició d'aquest tipus d'intel·ligència artificial ens hauria de fer replantejar com s'avalua a l'alumnat?

Sigui amb Chat o sense, hauríem de centrar-nos en els processos d'interaccions i causa. I enfocar-la a coses a fer sense la IA, com per exemple experimentar. Allò té un valor en si mateix i són experiències molt més vivencials. L'objectiu és fer-la servir per aprendre amb ella i no contra ella.

Com et descriuries amb una paraula?

Impulsiva

Què vol dir ser mestra per a tu?

Vol dir vocacionalitat. Aprendre de l'aula i dels alumnes i estar preparada per a un aprenentatge constant. Has d'entrar a classe obert a aprendre.

1. Saps què és la IA? Has sentit a parlar del Chat GPT? L'has vist fer servir durant les pràctiques als centres?

Si, el conec i n'he sentit parlar. No l'he vist fer servir a ningú pràcticum.

2. Creus que s'hauria d'utilitzar a l'escola? La fas servir?

Hauríem d'educar a fer-la servir de forma correcta. Els deures els fan amb Chat. Com a mestres ensenyar una eina útil, però que s'ha de fer servir bé. Tecnologies molt positives si es fa un bon ús. Important que pensin, i ser crítics i que tota la informació que ens dona s'ha de poder contrastar. Un bon ús escolar però formacions als alumnes. Proposar feines diferents per estimular la reflexió i pensament crític dels alumnes en comptes de respostes que el Chat ens pot donar.

I als mestres? Un tema molt nou que tothom el desconeix bastant. Com educar-nos a nosaltres i com educar als alumnes - fent formacions.

La fas servir? Sí, com ajuda, però comet molts errors. En certa mesura és normal perquè acaba de néixer i es troba en una fase molt inicial. És per això que tota la informació s'ha de contrastar. A l'hora de fer seqüències didàctiques, si vols idees noves, actualitzades i innovadores és una eina que pot resultar de gran utilitat. Ajuda amb el tema de la creativitat.

3. Creus que el seu ús és adequat (o no) per tots els cursos d'EP?

Segons el meu parer s'hauria de començar a un cicle superior. Que és quan tenen ordinador. Abans considero que són molt petits.

En el cas de secundària és diferent. A l'aula jo no el faria servir, però a casa, els que tinguin accés, el poden fer servir. Penso que s'haurien de plantejar deures a casa a fer sense la possibilitat que utilitzin el chat. Sent conscients que a casa el poden fer servir, explicar com. A més a més, el tema deures caldria replantejar-lo i treballar a l'aula tot allò que pugui requerir un reforç o ajuda. Lectura a casa en comptes del revés, i a classe els "deures".

4. Si l'haguessis d'utilitzar, com ho faries? Creus que és una font fiable?

Repetir. "Tecnologies molt positives si es fa un bon ús. Important que pensin, i ser crítics i que tota la informació que ens dona s'ha de poder contrastar. Un bon ús escolar però formacions als alumnes. Proposar feines diferents per estimular la reflexió i pensament crític dels alumnes en comptes de respostes que el Chat ens pot donar."

5. Com veus la relació de la IA (Generadora de text com Chat Gpt) i l'educació en el futur? És inevitable?

L'educació canvia molt i cada cop més ràpid. La Ia està influenciant l'aprenentatge dels alumnes. Si no comencem a posar fre al tema i saber fer un bon ús pot ser que acabi afectant negativament als alumnes. L'educació tradicional de fa 20 anys no és la mateixa que ara amb ús d'ordinadors... Tot va de la mà, el canvi social amb l'educació. Avui dia tenim accés a molts llocs. Crec que s'hauria de plantejar posar restriccions, com l'accés que tenen en el tema pornogràfic. Per frenar aquest boom

o ús no supervisat. Realment és una eina perillosa si no es fa bon ús.

6. Creus que l'ús de la IAGen en contextos educatius genera dilemes ètics?

Quins? Quina és la teva posició?

La realitat és que vivim en una societat molt impulsiva, ho volem tot al moment i ara. Vivim en aquesta societat i les nostres ments, cada vegada més comencen a funcionar així. Millor fer els deures en 5 mins i jugar una hora, trista i probablement a les consòles.

Penso que és impossible eliminar el Chat Gpt. Però no tot és o blanc o negre. Huriem de buscar un punt entre-mig i desenvolupar el pensament crític tot i saber que aquesta IA existeix. Si tu ho prohibeixen com a mestra penso que és fàcil provocar l'efecte contrari, i més la utilitzaran. És molt útil que ens dongui idees, però és imprescindible que la desenvolupem nosaltres.

Penso que l'objectiu no hauria de ser eliminar-la sinó educar a fer-la servir. “Estareu dos hores sols, doncs busquem 30 mins en comptes de 5, i que ens ho faci tot el Chat; o 2 hores si no utilitzéssim”.

No sabem encara ni nosaltres les possibilitats que té. No penso que ens hagi d'eliminar el pensament. Hem de tenir una opinió, aprendre a pensar i ser reflexius. Tot està en l'educació. Com ja he dit abans, l'educació i la societat canvien i el nostre objectiu és fer créixer als alumnes amb aquesta eina. Considero important també que des de l'escola es canviï el tipus de deures, per uns que estimulin més la reflexió.

7. Que li diem a un nen si ens diu que no li cal saber alguna cosa perquè ja li diu el ChatGPT?

Penso que si plantegem els deures o les SA de manera diferent, més Innovadores i globalitzades, aquest pensament de “per què ho he de fer, o quina mandra...” reduiria dràsticament. La idea és motivar-los a saber pensar. Provocar-los. Incentivar coses que obliguin a pensar. Crec que l’educació hauria d’Anar cap aquest camí, o enfocada d’aquesta manera. Gran part de l’ensenyament, resideix en la motivació. Si no li troben el sentit a què aprenen, òbviament no volen fer les tasques, i si les fan, perquè és cert que s’han de fer, la voldran fer ràpid perquè no li troben el sentit a fer-la. Als mestres ens ve molta feina, ara més que mai, per pensar tot això. I aquí és on torna a entrar una mica el chat i el seu ús. Que si els sabem utilitzar de manera adequada, ens pot estalviar feina, o si més no, temps. De veritat repeteixo que sense motivació no hi ha aprenentatge.

I creus que és possible motivar a tothom?

És complicat perquè hi ha diferents interessos, crear ambients motivador a l’aula i buscar que tots puguin estar mínimament motivats és una tasca molt difícil. Sobretot depenent del grup i del context. Però si tu coneixes als alumnes és més fàcil fer-los participar activament o inactivament, però fer-los participar a tots/es. Es veu quan un mestre disfruta de la seva feina. Hi ha profes que t’enganxen perquè ells/es estaven motivats. Intentes englobar tots els alumnes, i que entre ells es motivin els uns als altres, que vegin clars els objectiu i la producció final, la utilitat.

8. Creus que l’aparició d’aquest tipus d’intel·ligència artificial ens hauria de fer replantejar com s’avalua l’alumnat?

100%. Actualment s’avalua d’una forma molt tradicional. Es clara la diferència

de com la societat ha evolucionat i això no. Penso que s'ha d'igualar a com treballen i centrar-los més en el centre del seu propi aprenentatge, apostant per les, per exemple, autoavaluacions, entre d'altres, que fomenten la reflexió de l'alumnat. El sistema obliga a l'avaluació. Intentar que els alumnes siguin conscients de com, quan i perquè. Cal destacar que l'avaluació jjo estic a favor de que sigui Positiva i negativa. El feedback negatiu constructiu també és important. A més, un altre tema important a destacar d'aquest aspecte és els tipus de diversitat que trobem a les aules, la qual és bastant diferent. També cal replantejar els criteris d'avaluació per aquesta diversitat i quina aventatge ens pot donar la IAGen.

The impact of artificial intelligence in the development of critical thinking in Primary Education

A little bit about you...

1. Com et descriuries amb una paraula?

Perfeccionista

2. Què vol dir ser mestra per a tu?

El meu tiet és mestre i per a mi sempre ha estat sempre un exemple a seguir.

3. Explica'm una mica sobre com has arribat fins a aquesta escola... (Formació, especialització...)

Batxillerat científic i després em vaig adonar fent el casal d'estiu que el que realment volia fer era educar més enllà del lleure.

AI within Primary Education

4. Saps què és la IA? Has sentit a parlar de Chat GPT?

Sí, sé que és. Va sortir quan estava fent 2n de batxillerat i el va començar a utilitzar aleshores.

5. Creus que s'hauria d'utilitzar a l'escola? La fas servir?

Si creu que es podria utilitzar però a l'ESO o Batxillerat, fent-lo servir com a eina d'estudi o bastida de suport, però no per copiar les respostes sense tu abans haver-les pensat. Ara la utilitza més, tot i que considera que en fa un ús adequat. Xarxes socials com tiktok mostren vides en els quals explica què i com preguntar-li per fer-ne un ús adequat.

6. Creus és el seu ús és adequat (o no) per tots els cursos d'EP?

Considera que a l'etapa de primària encara és massa aviat, però en cas que l'hagués de fer servir seria a cicle superior.

7. Si l'haguessis d'utilitzar, com ho faries? Creus que és una font fiable?

Pensa que com a docent, abans de fer-lo servir amb infants, s'hauria d'informar. Si no saps fer servir aquesta eina, no li treus profit i no et dona la informació idònia. En cas de fer-lo servir ella aposta per utilitzar-lo per un altre tipus de tasques. Com per exemple, no limitar-se a fer un text sinó altres coses com una rúbrica o suport d'un projecte i ser un mateix qui utilitzi i modela la informació que el Chat GPT ens ofereix. D'altra banda, no creu que sigui una font 100% fiable, i és per aquest motiu que sempre s'ha de contrastar. Mai et pots quedar amb la primera font.

8. Com veus la relació de la IA (Generadora de text com Chat Gpt) i l'educació en el futur? És inevitable?

És inevitable, n'estic segura, diu. Si tanquen el Chat GPT en sortirà un altre. Considera que no l'hauríem de veure com una amenaça, i aprendre a fer-lo servir bé. En aquest cas, pot ajudar a estalviar temps a l'hora de fer gestions més automàtiques. El Chat GPT fa feines d'educació tradicional. És per això que s'hauria d'apostar per un model d'ensenyament a partir de projectes o d'escola 21 on és més difícil que el Chat GPT et doni respostes.

I sí, és inevitable perquè avança molt de pressa, no veig la possibilitat que pari, en tot cas anirà a més.

9. Creus que l'ús de la IAGen en contextos educatius genera dilemes ètics?

Quins? Quina és la teva posició?

Sí, 100% atès que la IA no té en compte cap ètica i no fa una filtració de la informació amb la qual es basa. Tot i que ella es mostra a favor de fer-la servir, no ho deixaria tot en mans de la IA. Defensa que ens hem d'adaptar per no quedar-nos enrere. En un futur professional pensa que el farà servir a l'aula. Ella en fa ús tant com a bastida de suport amb els alumnes i personalment per dissenyar activitats a les aules. Millor ensenyar a què ho facin servir bé, i que ho integrin com una eina útil, abans de promoure un mal ús.

10. Què li diem a un nen si ens diu que no li cal saber alguna cosa perquè ja li diu el ChatGPT? Creus que és possible motivar a tothom?

Una possible resposta seria que si la informació la sap una màquina ens pot ser molt útil, però no serveix de res si no ho saps tu. Que no ens tornem analfabets. Tu no ets una màquina que depèn del Chat.

Ara es fa servir molt, i personalment l'ha vist utilitzar a les aules a cicle formatiu de grau mitjà.

11. Creus que l'aparició d'aquest tipus d'intel·ligència artificial ens hauria de fer replantejar com s'avalua a l'alumnat?

Sí, s'hauria d'apostar per feines menys tradicionals i apostar més per treballar a partir d'un debat o activitats sorpreses. Posar menys deures i tenir més en compte el procés i l'evolució de l'alumne que no pas una simple entrega. A més, com que no es pot controlar el procediment a casa, ella considera que no hauria de poder ser avaluatiu.

Intro

Estudiant de 5è any de carrera. No fa menció, és generalista. Ha fet un SIQUE a Mallorca un any i per altra banda ha marxat un semestre a Bèlga, Leuven, d'Erasmus. Aquest any està fent algunes assignatures i en breus marxa a Tailàndia a fer el pràcticum 4 i 5. Si s'hagués de descriure amb una paraula, seria optimista. I per ella ser mestre és tenir la responsabilitat i l'oportunitat de guiar i inspirar els alumnes, ajudant-los a aprendre i créixer tant acadèmicament com personalment.

1. Saps què és la IA? Has sentit a parlar de Chat GPT? L'has vist fer servir durant les pràctiques als centres?

Sí, sé què és la IA i el ChatGPT. És un dels mils exemples d'intel·ligències artificials que més en sentim a parlar últimament. I no, no l'he vist fer servir als centres en ningú dels meus pràcticums.

2. Creus que s'hauria d'utilitzar a l'escola? La fas servir?

Pot ser bastant perillós utilitzar la IAGen a l'escola sobretot perquè els alumnes ja en saben més que les Mestres. A part, seria reincidir un cop més a l'ús de les tecnologies per aprendre i no sé fins a quin punt pot ser perjudicial pel desenvolupament de l'alumne tenint en compte que probablement a casa, depèn de la família, ja faci molt ús de les tecnologies. Jo a nivell personal l'he fet servir algun cop com a vestida de suport tot i que em forço a no fer-lo servir gaire.

3. Creus que el seu ús és adequat (o no) per tots els cursos d'EP?

Jo el faria servir per als grups dels més grans, sobretot a primer cicle ni ho contemplaria. Crec que aquesta edat necessiten recursos manipulatius per desenvolupar les competències bàsiques.

4. Si l'haguessis d'utilitzar, com ho faries? Creus que és una font fiable?

Si l'hagués d'utilitzar a l'escola, per començar l'aprendria a utilitzar jo per saber com fer-ne un bon ús i com detectar quan algú n'està abusant. Per altra banda, crec que si hem d'utilitzar la IA a l'escola com a eina d'aprenentatge prèviament algun equip n'ha de fer molta recerca i després s'ha de formar a l'equip docent. Si l'hagués d'utilitzar

crec que ho faria, només, com a eina de comparació. És a dir si necessito que els meus alumnes facin un projecte o escriguin alguna cosa els demanaria que em presentessin la feina feta per ells i que demanin al ChatGPT que facin el mateix per comparar-ho. També ho podríem utilitzar com a Font de recerca d'informació.

5. Com veus la relació de la IA (Generadora de text com Chat Gpt) i l'educació en el futur? És inevitable?

Crec que és bastant inevitable que no s'ajuntin els dos conceptes. Per tant, com a docents hauríem de conèixer-ne més del tema si l'hem d'utilitzar com a eina d'ensenyament.

6. Creus que l'ús de la IAGen en contextos educatius genera dilemes ètics?

Quins? Quina és la teva posició?

Clar que genera dilemes ètics, com qualsevol tema que toqui una mica l'educació. Crec que la meua posició ha quedat bastant clara durant les respostes anteriors però jo intentaria evitar-ne l'ús al màxim i, sobretot, treballar d'una manera que els alumnes no els sigui útil utilitzar la IA i aprenguin a partir de la reflexió, el debat, la manipulació, etc.

7. Que li diem a un nen si ens diu que no li cal saber alguna cosa perquè ja li diu el ChatGPT?

Que a pensar no s'aprèn sol i que el ChatGPT no ho sabrà tot sempre. El cervell s'ha d'entrenar si quan siguem adults volem ser adults crítics i autònoms. La intel·ligència ens fa ser poderosos i independents i amb el ChatGPT no crec que adquirim, precisament, intel·ligència.

8. Creus que l'aparició d'aquest tipus d'intel·ligència artificial ens hauria de fer replantejar com s'avalua l'alumnat?

Claríssimament. Sobretot perquè fins ara s'ha utilitzat molt el demanar que els alumnes facin una cosa, ens la portin feta al cap de dos dies i corregir-ho sense veure ni ajudar-los en el procés de creació de la tasca, per tant, no saben com han arribat a aquelles respostes.

The impact of artificial intelligence in the development of critical thinking in Primary Education

A little bit about you...

1. Com et descriuries amb una paraula?

Una persona amb sentit comú.

2. Què vol dir ser mestra per a tu?

Aconseguir que els nens vinguin contents, com a bàsic, i per altra banda promoure la comoditat a l'aula, que sigui un espai on tots/es estiguem a gust. Considero que no hi ha aprenentatge sense motivació, per tant saber escoltar i motivar als alumnes. I per últim és també imprescindible crear un vincle de confiança i respecte amb els teus alumnes.

3. Quants anys portes exercint aquesta professió?

Aquest és el seu 8è any.

3. Explica'm una mica sobre com has arribat fins a aquesta escola... (Formació, especialització...)

Vaig fer el grau d'Educació Primària, i generalista. Erasmus a Finlàndia i pràctiques extracurriculars de mestre de suport d'espanyol a Jyväskylä. A l tornar anava alternant substitucions amb feines com a monitor de menjador, escoles de repàs... Fins que em van trucar per començar aquí per fer mitja jornada, i ja fa 3 anys que estic a temps complet. Actualment soc tutor de 6è.

AI within Primary Education

4. Saps què és la IA? Has sentit a parlar de Chat GPT?

No l'he utilitzat mai, però avui en dia he escoltat molta polèmica i sembla que tot gira envers això. No soc molt "informàtic".

5. Creus que s'hauria d'utilitzar a l'escola? La fas servir?

En la meua opinió aquest tipus de IA promou la llei del mínim esforç. És cert que pot servir d'ajuda per fer una SA d'opos o planificar una classe. Però no demostres com ets com a docent. Estic d'acord en que pot arribar a fer meravelles però com a societat ja tenim un

pensament molt vago. Sense anar més lluny de les compres per internet. Tot ho volem ja i ara. Si ja és preocupant a nivell social. Incorporar-lo a l'escola... s'ha d'anar amb molt de compte. I sobretot no fomentar, o normalitzar el seu ús a l'aula.

En el cas dels alumnes d'educació especial, que disposen d'un PI, facilita molt la feina, ja que per exemple a l'hora de fer recerca et permet ser molt més concreta i obtenir resultats acord amb el tema que estem investigant de forma autònoma.

6. Creus és el seu ús és adequat (o no) per tots els cursos d'EP? Aviam, poder es podria perquè cicle inicial té tablet i cicle mitjà i cicle superior ordinadors. Però trobo complicat fer servir Chat GPT amb els més petits. Potser si l'hagués d'utilitzar seria amb els alumnes de 8-12 anys. Tot i així jo no l'utilitzaria, ja que és un altre input que fomenta l'ús de pantalles i que prefereixo que l'utilitzin quan tinguin més criteri, ja que ara no els ajudaria a pensar, sinó a diexar de fer-ho.

7. Si l'haguessis d'utilitzar, com ho faries? Creus que és una font fiable?

Si l'hagués de fer servir primer m'informaria i l'aprendria a fer servir jo per treure-li el màxim de suc i saber-ne fer un bon ús. De la mateixa manera que la Generalitat ha proporcionat cursos bàsics de Google, ara convindria fer un per l'ús del Chat. No crec que sigui una font poc fiable però crec que sempre s'hauria de contrastar.

8. Com veus la relació de la IA (Generadora de text com Chat Gpt) i l'educació en el futur? És inevitable?

Penso que és inevitable perquè està a l'abast de tothom que disposi d'un aparell electrònic. L'educació és un reflex de la societat i no podem desvincular una cosa de l'altra, per tant sí que és inevitable. Tot i així lo ideal seria que aquest tipus de IA es faci servir amb un objectiu concret, i no perquè sí o qualsevol dubte. Crec que s'hauria d'utilitzar com una eina similar a un reforç.

Sempre i quan hi hagi una supervisió d'un bon ús. I no només prestar atenció a l'hora de cercar informació o fer deures sinó per la manipulació de contingut o fotografies que acabin en abús. A principi de curs van venir els mossos a explicar-nos molts perills de l'ús d'aquest tipus de IA.

Creus oportú vetar el seu ús?

La tecnologia avança molt ràpid, la gent que creix amb això ja ho té integrat per tant és difícil d'entendre per nosaltres que ja som més grans. D'aquí a uns anys canviarà totalment la forma d'entendre les coses. Crec que vetar-ho no està a les mans dels mestres com a tal sinó que depèn del PEC. Opino que hi ha moltes maneres d'establir un ús o desús de certes coses. I no penso que erradicar-ne l'ús sigui la solució, perquè al final si la volen utilitzar fora del cole, poden fer-ho sinó com orientar el seu ús amb un objectiu específic.

9. Creus que l'ús de la IAGen en contextos educatius genera dilemes ètics? Quins? Quina és la teva posició?

Els dilemes ètics que pots arribar a generar son estar a favor o en contra del seu ús a les aules. Tot i que no tot és blanc o negre. Des del meu parer, penso que amb aquesta eina no es treballa l'esforç. I que no motiva a la voluntat d'aprendre a la vegada que fomenta una actitud menys crítica. Creix el "quin pal" que ja és molt present avui en dia, en part a causa de l'ús de les pantalles i xarxes socials.

* si sorgeixen eines que ho fomenten o que ho faciliten que no val la pena pq tens accés. ?

10. Que li diem a un nen si ens diu que no li cal saber alguna cosa perquè ja li diu el ChatGPT?

És veritat que avui en dia, com a societat tenim molt més accés a la informació gràcies a saber utilitzar aquestes eines. Però és fonamental tenir uns coneixements mínims per poder detectar els errors, perquè com tot, poden fallar. A més, és molt important saber com utilitzar-la bé.

Amb els anys jo he vist, i ara també es pot observar amb el nou currículum, com ja no es dóna tanta importància a tenir coneixements sinó a adquirir les habilitats, eines i estratègies per solventar el teu dia a dia de manera àgil. No tant el saber, sinó el desenvolupament d'aquest saber.

11. Creus que és possible motivar a tothom?

Pels alumnes, tota la tecnologia és molt atractiva. Però opino que en el dia a dia també hem d'aprendre a fer coses que no ens agradin. Per després poder gestionar millor les tasques o gestions que hem de fer durant el dia o al llarg de la vida. Defenso plenament que l'escola ha de ser motivadora però no tot és un jijijaja.

12. Creus que l'aparició d'aquest tipus d'intel·ligència artificial ens hauria de fer replantejar com s'avalua a l'alumnat?

(No va entendre molt bé al que jo em referia amb l'avaluació)

A l'aula no perquè si no la fem servir, no hem de patir perquè segueix igual. Pel que fa als deures, hi ha variables a casa que no podem controlar, en referència a que l'utilitzin o no. Però en certa mesura coneixem a l'alumne, la seva actitud i predisposició d'aprendre, la seva producció... I això ja ens dona moltes pistes sobre si l'han fet servir. Així i tot, jo mai avaluo algo que hagin fet a casa per aquest motiu, que hi moltes coses que se t'escapen. Només avaluo el que es fa a classe.

The impact of artificial intelligence in the development of critical thinking in Primary Education

A little bit about you...

1. Com et descriuries amb una paraula?

Alegre

2. Què vol dir ser mestra per a tu?

Aportar, als infants que tinguis a la teva vida. Estimar-los i que puguin comptar amb tu. Poder ajudar és primordial.

3. Quants anys portes exercint aquesta professió?

Aquest és el seu segon any.

4. Explica'm una mica sobre com has arribat fins a aquesta escola... (Formació, especialització...)

Carrera uab en anglès. No fa menció. A l'acabar treballa de mestra d'infantil a Irlanda i allà va decidir especialitzar-se en pedagogia terapèutica. Aquest curs va començar a una escola privada fins que la van trucar de la pública per fer substitucions de l'especialitat.

AI within Primary Education

5. Saps què és la IA? Has sentit a parlar de Chat GPT?

Sí, n'ha sentit a parlar i en fa ús. Ús en l'àmbit laboral no l'ha utilitzat mai però sí en l'àmbit d'estudiant. No l'utilitza per a motius personals.

6. Creus que s'hauria d'utilitzar a l'escola? La fas servir? O l'has vist fer servir durant les pràctiques o per altres mestres?

Chat gpt és com un google que et fa ser menys crític. Et proporciona informació mastegada que fa que tu no tinguis cap tipus de contrast o crítica en el que llegeixes perquè ja saps "lo correcte", si més no és el que li pot semblar a un infant. Amb google pot passar però per això se'ls ensenya a fer selecció de fonts fiables.

Com a docent, el Chat GPT pot arribar a ser útil per idees de creació d'activitats i no les hauràs de pensar. Però fins a quin punt? Perquè nosaltres també hem d'exercir la ment. En el cas dels infants, si ja des de petits no els fem raonar s'acostumen i no sabran utilitzar la seva ment. A l'edat de primària per a mi és impensable fer-ne ús, però et diria que fins i tot fins al batxillerat, jo no ho donaria com una eina a utilitzar.

I el seu ús fora de l'aula? El problema de fora de l'aula, és igual que tiktok i instagram, no està a les nostres mans. Tu pots deixar-te la pell per fomentar uns valors, que si des de casa no col·laboren o comparteixen, no serveix.

Si veiés que surt el tema de chat gpt a l'aula tampoc obviaria el tema, i faria preguntes com ... Què és això? Què ens proporciona? Potser inclús faria fer un treball i fer-los conscients de les conseqüències positives i negatives. I sobretot emfatitzar la importància de fer-ne un ús responsable. Però si no hi ha una necessitat de grup a parlar del tema, o un context específic, no seré jo qui els hi ensenyi, perquè com més tard triguin a descobrir-ho, millor.

Creus que és necessari/convenient ensenyar-lis a com fer un bon ús d'aquesta eina?

No, perquè no m'interessa que ho facin servir. A més ja és molt intuïtiu, tu li preguntes i ell et respon concretament allò que tu li has preguntat. En canvi, google no. Crec que és diferent. Google et permet fer selecció, haver de llegir més...

7. Creus el seu ús és adequat (o no) per tots els cursos d'EP?

No, per ningú.

8. Si l'haguessis d'utilitzar, com ho faries?

Si ens uns anys ho proposessin al PEC de l'escola o fos tutora, m'ho hauria de plantejar. Ara per ara, com a mestre d'educació especial crec que no és algo amb el que em pugui trobar. Però faria preguntes per reflexionar als meus alumnes. Que ens aporta, aspectes positius i negatius. Explicar aquests aspectes a la resta de cursos fent un pòster. Els hi plantejaria què podem perdre nosaltres si l'utilitzem. I es que ens treu una part molt important nostre, de l'ésser humà, que és el pensament. I, posteriorment, doncs si que explicaria quines preguntes fer, com fer-les, quan... que ens permeti obtenir la millor resposta a la nostra pregunta.

Creus que és una font fiable?

És una pregunta complexa. No ho sé. Així de primeres et diria que sí, perquè fa una filtració de tota la informació que té la xarxa. Però d'altra banda, no et dona referències o t'indica d'on ha extret allò que està dient, l'any de publicació... Per tant, no ho sé. Suposo que és més o menys fiable també depenent de la pregunta que li facis. És cert que amb el Chat tot és molt més ràpid i eficaç, però no saps del cert lo verídric que és allò que t'està dient, fins que tu no contrastes la informació o fas servir el teu pensament crític. Que remarco que ha d'haver estat entrenat i desenvolupat previament.

En l'àmbit educatiu tu hi estas en desacord però el faries servir en altres àmbits?

Sí. Però tornem al mateix, deixes de pensar. També és veritat que com a alumne, si t'hi poses a pensar dius: Quines desavantatges té a l'hora de fer un treball? Si guanyes temps, possiblement qualitat, i pots dedicar aquest temps a fer altres coses que realment t'interessin? És molt probable que els adolescents o els universitaris o els nens, es posin a ser reflexius dient, ai això no desenvoluparà el meu pensament crític. Perquè potser aquell treball, encara que t'hi passis 5 hores, tampoc tinguin la sensació que l'estigui desenvolupant (el pensament crític).

9.Com veus la relació de la IA (Generadora de text com Chat Gpt) i l'educació en el futur? És inevitable?

Ho veig negre. Clar, es que és el futur, no es pot evitar, però si ens volen com a borregos ho aconseguiran d'aquesta manera. Ja no tindran idees. Estem fent als nens inútils. Ja ho estem nosaltres amb IG imagina't un nen que ha nascut amb això. La realitat dels centres avui en dia és que ja no saben crear un conte. S'està perdent ja amb l'ús de pantalles. Tot el que és la

creació i la imaginació. Està sota límits. Doncs no em vull imaginar com avançarà tot això.

Així doncs, vetaries el seu ús?

Sí. I penso que ens suposaria un inconvenient perquè deixariem de tenir-ho tot tan fàcil. Però considero que ho haurien de vetar. O almenys que es faci privat, i així potser minimitzar danys. Però no interessa.

10. Creus que l'ús de la IA Gen en contextos educatius genera dilemes ètics? Quins?

Quina és la teva posició?

Sí però com tot, i més en l'àmbit escolar. Respecte als pares no saben el que implica deixar que els nens facin ús d'això. I ni haurà d'altres que, com jo, estaran en contra.

Considero que no és que el Chat et dongui millors idees sinó que te les dona al moment i és immediat. És molt útil però és una arma de doble fil. Si ets adult pots entendre més quan i com fer-lo servir.

11. Que li diem a un nen si ens diu que no li cal saber alguna cosa perquè ja li diu el Chat GPT? Creus que és possible motivar a tothom?

Li explicaria que quan formentes que el teu cap pensi hi ha una satisfacció brutal. És una mica similar a lo d'ensenyar les mates tenint calculadora. És important desenvolupar certes parts del cervell. Per crear coneixement hem d'aprendre i equivocar-nos.

No podem obviar aquesta eina, però si li preguntessim tot, llavors no vindrem a l'escola. Podries saber el que vulguessis, quan vulguessis perquè hi ha el Chat que ja t'ho diu. Però no series capaç de plantejar-te ni les preguntes que li voldries fer. Podriem saber-ho tot, sense saber res. No sabriem aplicar-ho. El chat no t'ensenyà això. Per exemple, si no sabem sobre historia seguiríem cometent els mateixos errors. D'altra banda, no podriem ser autosuficients, i per tant mai seriem lliures. Això sí, penso que hi hauria moltes coses que no caldria que aprenguessim. I això ens porta a la última pregunta.

12. Creus que l'aparició d'aquest tipus d'intel·ligència artificial ens hauria de fer replantejar com s'avalua a l'alumnat?

Una cosa és aprendre a través de memoritzar, que ja hi ha molts estudis que demostren que no pot ser la base de l'aprenentatge. Avui dia, això està començant a canviar, ho veiem amb el canvi del currículum, el qual s'enfoca o es centra més en ser competent. Saber buscar informació per aplicar-la segons el context, etc....

Crec que la clau està en com utilitzar aquesta eina com a suport de l'aprenentatge però no perquè el substitueixi. Ens estem quedant obsolets.

I sí. Ens haurem de plantejar com ensenyar i què, i com avaluar. Avaluar a través de preguntes com “quina és la teva opinió o la teva posició”. Suposo que ara més que mai, que desenvolupin el pensament crític, el raonar, el equivocar-se, el preguntar-se... No sé ben bé com però estic segura que s'haurà de canviar. Sobretot l'avaluació.

Quanta gent ara jove llegeix el diari? Tot canvia. Però saber sobre la vida... Et fa ser sabia, rica, i emocionalment això també es nota. Crec que hem de despertar l'admiració per aquelles persones que saben.