Artificial Intelligence's Role in Educational Creativity Across Different Educational Levels: Ethical Challenges and Issues of Originality

By
Huang-You Hou
侯皇有
Li-Young Fang
方立洋
Su-Yu Xiang
蘇渝翔

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This senior paper was presented.

By
Huang-You Hou
侯皇有
Li-Young Fang
方立洋
Su-Yu Xiang
蘇渝翔

It was defended on

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and approved by

Reviewer 1: Yu-Hsuan Lee, Assistant Professor, Department of International Affairs

Signature: _____Date: _____

Reviewer 2: Ren-Her Hsieh, Chair, Department of International Affairs

Signature: _____Date: _____

Advisor: Philipp Fluri, Visiting Professor, Department of International Affairs

Signature: _____Date: _____

A Comparative Study of Artificial Intelligence`s Role in Educational Creativity Across Different Educational Levels: Ethical Challenges and Issues of Originality

Huang-You Hou 侯皇有
Li-Young Fang 方立洋
Su-Yu Xiang 蘇渝翔
Wenzao Ursuline University of Languages, 2024

Abstract

This research examines how artificial technology operates in the educational environment and what impact it has on the environment. Our research group interviewed educators in 9 different types of educational environments (elementary to college) for the study because they best understand the impact of AI on learning and creativity. Our interview questions were divided into three main sections totaling 14 questions, Creative Collaboration and Artificial Intelligence in Educational、Ethical Consideration, and Legal Framework. The first section focuses on the desire to understand the use of AI in educational environments and how it affects creative expression and collaborative creation. The second part is to know about the various ethical issues that AI often raises in creative endeavors. The third part is due to there not being many existing regulations on AI. We hope that the interviews will show what most of the respondents expect to see in future laws.

After in-depth research, comparison, and analysis, we have gained a deep understanding of how AI affects students' creativity nowadays. With the growth and popularization of this technology, most educators said that the efficiency of their students has increased, but the quality has decreased. However, the main point of maintaining the quality of student's learning in this era of rapid AI advancement is to rely on better laws. This study ends by calling on educators' policymakers and

technologists to work together to shape the future role of AI in education in such a manner that AI can contribute to rather than limiting AI to solve existing crises.

Keywords: Artificial Intelligence、Education

人工智慧在不同教育水平中所扮演的角色的比較研究:
道德挑戰和原創性問題

侯皇有 方立洋 蘇渝翔

文藻外語大學國際事務系,2024

摘要

這篇論文是在研究人工科技如何在教育環境中運作以及他對這個環境造成甚麼樣的影響。我們的研究團隊採訪了九個國小至大學不同類型不同教育環境的教育者進行研究，因為我們認為他們最了解人工智慧對學生學習及創作的影響。我們的採訪問題分成三大部分總共是 13 個問題，分別是創意協作與教育中的人工智慧、倫理考量以及法律框架。第一個部分主要是希望了解人工智慧在教育環境中的應用，以及它如何影響創意表達與協作創作。第二個部分是想知道人工智慧在創作上常常引發的各種倫理問題。第三部分則是因為現有對於人工智慧的規範並不多，希望透過訪問來得知大部分的採訪者期望未來法律的看法。

經過深入研究、比較與分析後，我們深刻的瞭解到了現今人工智慧是如何影響學生創作的現況，隨著這項科技的成長及普及化，大部分的教育者都反映出了學生們的效率提高了，然而質量卻下降了。而在這個科技蓬勃發展快速的時代，能夠保持學生本該有的學習質量的關鍵還是需要透過完好的法律來規範。透過這項研究呼籲教育者們與立法者共同努力，以好好利用 AI 來貢獻社會為目的，而不是限制 AI 來解決現有的危機。

關鍵字:人工智慧、教育

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CHAPTER 1. INTRODUCTION

Background

With the evolution of the times, science and technology have changed the lives of human beings. Some basic work no longer needs to be done by human beings one by one, it only takes less than a few seconds to complete it when handed over to artificial intelligence. Especially in the field of education, where students create. With the advancement of science and technology. Artificial intelligence can be very effective in assisting students in learning, such as providing useful information, professional advice, or sorting out key points. However, this also leads to creators relying too much on the assistance of artificial intelligence, and directly abusing this technology without thinking. In addition to professional skills, schools teach students the ability to think critically, and this has clearly changed today. Therefore, the researchers decided to explore the impact of AI on creativity in the educational environment and what are the possible ways to norm this phenomenon.

Motivation

With the rapid development of artificial intelligence, the method of school education has also changed significantly in recent years. Unlike in the past, when students had to go to the library to find and collect materials, students now rely on technology to provide personalized service and efficient problem-solving techniques to complete tasks given by professors quickly. This change points to issues related to “how to properly balance between the use of AI and the importance of originality in an academic environment”. The researchers will be exploring how to balance originality

and artificial intelligence. What are the ethical considerations and how to properly use and regulate this technology?

Our main goal is not only to show the status of AI in the educational environment nowadays but also to find ways to prove that AI can preserve the quality of learning for students. Providing more convenient and diversified learning aids, rather than being a substitute for student creativity.

Research Purpose

Our main objective is to explore how artificial intelligence specifically affects the educational environment, especially in the area of student creativity. Our research will also help educators understand how AI affects students' creative thinking. ‘Did the students' problem-solving skills increase as a result? Is the quality good?’. At the same time, our research process will also analyze the ethical issues and implications of artificial intelligence in the creative process and compare them with the existing literature. The goal of the research is to contribute to how students can maintain a certain degree of originality and improve the standard of their work while utilizing artificial intelligence as an assistive tool.

Research Questions

1. How does AI influence creative expression?

2. How to achieve the balance between AI generation content and author attribution?

3. How to develop ethical guidelines for the application of AI in educational creativity to prevent abuse in the creative process?

4. What possible challenges will be faced in the future?

Contribution

This study will examine the current state of Artificial Intelligence in educational environments. First, through interviews and further analysis, researchers will explore the actual impact of artificial intelligence on academic work. How does this technology help educators and creators in their generation, and how does artificial intelligence specifically help people to learn or solve problems? On the other hand, how does artificial intelligence challenge human ecology and what are the specific challenges? The authors will systematize and deeply analyze the advantages and disadvantages of artificial intelligence in the education environment, and after comparison, the authors will point out the challenges or situations that may be faced in the future. For example, after analyzing the results, it was found that most of the educators reported that the efficiency of the students was getting faster, but the quality of their work had decreased.

Secondly, the authors will look at the ethical challenges caused by Artificial Intelligence or the probable disputes. Through in-depth interviews, comparisons, and analyses, the authors provide insights into what society should be focusing on and the specific possible responses to avoid abuses in the use of artificial intelligence tools. Especially the excessive use of artificial intelligence by students, how to ensure the identity of creators, and some intellectual property disputes.

Finally, this research is intended to provide educators and law decision-makers with better strategic direction and recommendations to ensure the proper use of Artificial Intelligence by students and the public. The rise of this technology fosters more diverse creativity and still maintains originality. Our research not only aims to

educate for a better adaptation to the advent of new technologies but also tries to bring the people who read this article to create a society that can coexist well with Artificial Intelligence.

Limits

The most obvious problem with this study is that it is limited to the impact of artificial technology on the educational environment. Now that technology has become pervasive, the impact of artificial intelligence can be found everywhere in this world. All the impacts of technology are far greater than in one single essay. In addition, due to the limitations of the researchers, the sample reference of this study lacked diversity and strong reliable reference values. Finally, the main challenge is that with the rapid pace of technological advancement. This study will soon become outdated.

Delimits

The study will focus on educators at all levels and some creators, exploring their experiences and perceptions to understand their ideas, suggestions, and strategies.[1]

[1] The researchers used ChatGPT to proofread Chapter 1

CHAPTER 2. LITERATURE REVIEW[2]

Technological Mediation in Creative Expression

In the sphere of creativity, AI has transcended its role as a mere tool, becoming collaborators that reshape how artists, writers, musicians, and students engage in creative activities. For instance, AI can generate art, music, images, and films by synthesizing absorbed information, thereby enhancing human creativity. This intermediary opens new avenues, such as shortening creative processes, merging diverse styles innovatively, and providing access to creative tools previously restricted by technical expertise.

However, this impact also prompts significant questions about the essence of creativity itself. As AI systems increasingly contribute to or create works, the distinction between human and machine authorship becomes less clear. Fostering creativity in educational contexts is a primary objective, and this interaction has sparked debates about the extent of creative input from students versus the AI systems they utilize. Additionally, the development of student`s independent learning and critical thinking skills has emerged as a crucial concern. The attribution of creative outputs is also highly contentious. Thus, the equilibrium between human contribution and AI support shapes the level of creative expression within technological mediums, presenting both opportunities and challenges for how creativity is perceived and valued today.

[2] The researchers used ChatGPT to proofread this chapter.

Collaborative Creativity

When combined with technological mediation, collaborative creativity refers to a shared creative process between humans and AI systems, where AI no longer serves as a mere tool, but as a true co-creation partner. In this dynamic, AI is actively involved in the ideation, design, and execution of creative projects. Whether it is generating art, music, writing, or other forms of creative expression, AI can offer new perspectives, propose alternative approaches, and even independently create content. This process enhances human creativity by providing unique and often unexpected solutions that human creators might overlook. According to Davis, Skov, and Martindale (2022), AI`s ability to offer unique insights and solutions leads to surprising and innovative results, as it often explores cues and patterns ignored by human creators. This partnership showcases the potential for humans and AI to rely on each other to produce outcomes that neither could achieve alone. This is further supported by research from Colton, Wiggins, and Boden (2020), who argue that AI expands the realm of individual imagination in creative work by enabling new models and methods, pushing the boundaries of traditional artistic processes.

In educational settings, collaborative creativity takes on even greater significance as students are increasingly exposed to artificial intelligence tools that help them develop and enhance their creative skills. Through co-creation with AI, learners can explore novel ideas, build upon AI-generated suggestions, and push beyond their creative limits. AI can act as a stimulant for students` creativity, helping them to see things from new perspectives and challenge conventional ways of thinking. This interaction allows students to experiment with ideas they might not have considered on their own, allowing them to break through creative blocks or barriers they may

encounter. AI offers learners immediate feedback, alternative solutions, and pathways that can accelerate their creative learning process.

However, this evolving partnership between students and AI also raises important questions about authorship, ownership, and originality. When both humans and AI contribute to a creative project, determining who the “real” creator is becomes complex. Should the human, who directs and refines the AI`s output, be considered the sole author? Or should the AI, as an autonomous system capable of generating content, also be recognized as a co-author? These questions challenge traditional notions of authorship and ownership in art and creative industries. Moreover, as AI becomes more integrated into creative processes, there is growing concern about intellectual property rights and the ethical implications of AI-generated content.

Another critical issue in educational settings is the risk of over-reliance on AI. While AI can provide powerful tools for creativity, there is a concern that students might become overly dependent on these systems, potentially stifling their creative development. If students rely too heavily on AI to generate ideas, solutions, or content, they may lose the ability to think critically or creatively on their own. This could result in a diminished capacity for independent problem-solving and idea generation, as students might default to AI-generated solutions instead of developing their own. The challenge, therefore, is to find a balance where AI enhances human creativity without undermining the creative agency and originality of students.

Despite these challenges, collaborative creativity involving AI offers enormous potential for both educational and creative fields. AI`s ability to process vast amounts of data, identify patterns, and propose alternative approaches provides new avenues for creative exploration that were previously unimaginable. In education, AI can

democratize access to advanced creative tools, enabling students with limited technical or artistic skills to engage in creative processes more easily. It also allows for greater inclusion by providing support to learners with different learning styles or needs, ensuring that creativity is accessible to all.

Ultimately, the relationship between humans and AI in creative collaboration reflects a transformative shift in how the authors approach creativity itself. Rather than viewing AI as a threat to human creativity, it can be seen as a partner that enhances and extends human capabilities. As technology continues to evolve, so too will how humans and AI collaborate to produce creative work, offering exciting new possibilities for both individuals and society. However, maintaining a balance between AI assistance and human originality will be crucial to ensuring that this collaboration fosters creativity rather than limiting it.

Educational Impact on Creativity and Learning

AI's Role in Enhancing Creativity

AI has the potential to be a collaborator rather than a replacement for human creativity, say many researchers. Adaptive learning platforms and virtual tutors, as AI technologies, offer personalized, real-time feedback to support students' development of creative thinking skills[3]. Similarly, Kafai and Burke (2022) pointed out that AI tools promote problem-solving rather than rote learning and enhance the creative process.[4] There is also much to learn about AI's role in creativity augmentation, including how it can help students generate ideas and find solutions that drive students beyond straightforward approaches into more novel ones.

According to Ji, Han, and Ko, (2023),[5]Conversational AI plays an important role in creative development, especially in language learning. Their study shows that AI-powered platforms enable students to practice language skills in creative and interactive ways that will not be possible due to teacher workload. AI frees up teachers to focus more on instructional design and critical decision-making. This insight, from their work published on Semantic Scholar, examines AI's increasing effect on interactions between educators and students.

Additionally, the article from the Univet Bantara Journal explains how AI has been implemented in classrooms using intelligent tutoring systems (ITS), which are not only used for creative tasks but also for emotional engagement in subjects like mathematics.

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[3] Marrone, Rebecca, Victoria Taddeo, and Gillian Hill. "*Creativity and artificial intelligence—A student perspective."* Journal of Intelligence 10.3 (2022): 65.

[4] Yasmin Kafai and Quinn Burke, *AI's Role in Education: Creativity, Problem-Solving, and Learning* (Springer Open, 2022).

[5] Ji, Li, Min Han, and Seong Ko. *The Role of Conversational AI in Language Learning and Creativity*. Semantic Scholar, 2023.

These ITS platforms observe students' emotional states and provide personalized, creativity-boosting activities to keep them engaged (Univet Bantara Journal, 2023).

However, there are risks in relying on AI for creativity. Lan and Ho (2024) found that although AI tools are efficient, excessive reliance on AI-generated solutions may diminish student's critical thinking. This "creativity shortcut" undermines student engagement in the creative process, making it crucial for educators to strike a balance between human creativity and AI assistance.[6]

Ethical Concerns and Academic Integrity

The problem with using AI in education is that it has raised many big ethical questions, particularly around academic integrity. Challenges in the autonomous generation of high-quality content by AI include authorship and originality. Several institutions are attempting to set out clear guidelines so that students will use AI responsibly. As one example, the "AI Guidelines" that Kalaidos University of Applied Sciences created asked students to use AI as a 'sparring partner' instead of as a ghostwriter. The purpose of this policy is to cultivate transparency and to maintain that students are the main motivators of their academic work.[7]

A second concern concerning ethics in AI systems is that they could perpetuate inequality in educational environments. Dwivedi et al. (2023) highlighted that AI models trained on biased datasets can lead to outputs that are disadvantageous to certain

[6] Lan, Xia, and Wing Ho. Challenges of Over-Reliance on AI in Creative Thinking. Springer Open, 2024.
[7] Dwivedi, Yogesh, et al. Ethical Considerations in AI Education. Springer Link, 2023.

student groups and hence require ethical frameworks to protect fairness and inclusivity.[8]

In addition, the Univet Bantara Journal also discusses how the privacy of AI is linked to the storage of student data. Since these systems involve sensitive information, these systems need serious data governance protocols to prevent misuse, especially in areas where privacy laws are still being formed.[9]

Personalized Learning and Automated Assessments

One of AI`s most significant contributions to education is its ability to personalize learning. Ji, Han, and Ko (2023) illustrate how AI-powered platforms can make real-time adjustments to content based on individual learning progress, allowing students to better understand subject material through personalized feedback.[10] Beyond that, the Univet Bantara Journal discusses the trend of AI-powered assessment systems that automate grading and provide detailed feedback, significantly reducing the administrative burden on educators. These tools enable teachers to focus on more complex instructional design while students receive immediate, individualized responses to their work.[11]

Overall, AI is dramatically affecting education, serving as a powerful provider of creativity, personalized learning, and streamlined assessments. However, the ethical

[8] Dwivedi, Yogesh, et al. *Ethical Considerations in AI Education*. Springer Link, 2023.

[9] Univet Bantara Journal. *The Role of Intelligent Tutoring Systems in Creative and Emotional Engagement.* Univet Bantara, 2023

[10] Ji, Li, Min Han, and Seong Ko. *The Role of Conversational AI in Language Learning and Creativity*. Semantic Scholar, 2023

[11] Univet Bantara Journal. "*The Role of Intelligent Tutoring Systems in Creative and Emotional Engagement."* Univet Bantara, 2023.

concerns surrounding academic integrity and data privacy cannot be ignored. AI must complement, rather than overwhelm, the educational process. Therefore, a balanced approach—emphasizing AI's collaboration with educators is essential. As AI continues to evolve, educators and policymakers must address the associated challenges while also capitalizing on AI's potential to revolutionize how people learn.

Ethical Consideration and Legal Frameworks

With the popularization of artificial intelligence, creators use this technology more often in their creations. However, the issue of copyright has become more important. In the context of global challenges surrounding legal issues related to Artificial Intelligence, selecting the United States、China, and Taiwan as case studies is particularly significant. The relationships among these three countries have drawn attention, and their approaches to AI regulation and application not only reflect their respective policy directions but also have profound implications for the development of global technology and legal frameworks. Readers will understand the dilemmas brought by artificial intelligence nowadays.

United States

The first copyright law in the United States began in 1790 A.D. It was possible to properly protect the works of the creator. However, the copyright changed many times because of technological growth.[12] According to the U.S. Copyright Office's latest physical guidelines, works created without direct human intervention are not copyrighted. For example, if an AI is required to generate random patterns, these works will be in the public domain and will not be entitled to copyright protection because they are produced by the AI in a randomized way. However, because independently generated AI technologies will be in the public domain, the benefits of copyright protection will not be available to those who have invested in developing them. This might break the enthusiasm of developers.[13] In 1984 Sony Corp of America. V.

[12] U.S. COPYRIGHT OFFICE, supra note 4, § 306

[13] Sony Corp. of America v. Universal City S*tudios, Inc.*, 464 U.S. 417 (1984).

Universal Studios, Inc., showed the benefits of copyright law. The U.S. has sought to incentivize creators by rewarding the public for their work. Hoping that the creators will be able to earn money in a limited period and return to the public domain to let the technology be passed on to the next generation.

China

In 2017, China released the State Councils Artificial Intelligence Development Plan. This program is a central theme in the development of AI in China, and it focuses on how to use AI to strengthen China both politically and economically. This document also states that the goal of 2030 is to become a global center for AI innovation. Their target for the AI industry is to earn RMB 1 trillion. [14] This program shows China's desire to become technologically self-sufficient in the future without the help of other countries. In terms of education, the State Council`s Artificial Intelligence Development Plan also shows a strong willingness to train professional AI talents. In 2018, a plan for AI innovation in colleges and universities was implemented to create different educational environments through educational reforms. In recent years, an AI-adapted education system was established along with an increase in related skills training. The goal is to develop AI as the core of learning in the future.

Taiwan

Taiwan`s copyright law has been adapted through technological advances since 1928. In the 1985 version of the Taiwan Copyright proposed by the Executive Yuan, Article 1 states that “The purpose of this program is to protect the rights of authors and

[14] Knox, Jeremy. "Artificial intelligence and education in China." Learning, Media and Technology 45.3 (2020)

harmonize different interests to promote social welfare and national development."[15] This law aims to achieve three goals: to protect the rights of authors, to balance the interests of creators and society, and to promote the development of the country.[16]

Conclusion

After in-depth research and analysis, it is obvious that the United States, China, and Taiwan focus on different aspects. For example, Taiwan and the U.S. are all civil societies where people`s ideas have great influence. On the other hand, China is a community society. The US legislation is also oriented toward promoting public benefit through the benefit of individuals. This also shows that the US emphasizes economic benefits and hopes to promote the development of society by encouraging creators. Taiwan hopes to strike a balance between the individual and society. The creators need to develop creativity in society to enhance the development of society and culture. Finally, because of the communist system, China's copyright protection is prioritized in the national interest, and all technological creations must comply with the national policy objectives. In addition, the state will also actively provide resources for the betterment of society. Apart from demonstrating the different legal responses. These differences also further reflect the differences in their respective societies.

[15] Zhao Zuo Quan Fa (Copyright Act), Zhonghua Minguo (Republic of China), art. 1 [hereinafter *Copyright of Republic of China*].

[16] In the Legal framework part, the researchers used ChatGPT to sort out the points of the literature about China、the USA, and Taiwan`s AI-related law. The prompts are AI、copyright、Law and policy.

Future of Job Opportunities in Education with AI Development

The future of artistic careers is a dynamic field of inquiry, influenced by technological advancements and changing societal values. The quick development of AI technologies is changing the landscape of employment opportunities in education by creating positions that combine cutting-edge technology with instructional experience. The future of AI-related employment in education is examined in three important pieces, highlighting the revolutionary possibilities AI offers educators.

According to the Gigantic report, AI will provide new job prospects in the field of education. AI will force educators to take on numerous hats in addition to their usual teaching jobs. These hats can include developing AI curricula, becoming experts in learning analytics or even becoming educational data scientists. Creating AI-driven learning experiences, leveraging data to improve student outcomes, and putting AI-based technologies in place to automate processes like grading and student evaluations are all part of these positions. AI holds the potential to assist educators in developing more customized learning pathways, allowing them to tailor a curriculum to each student's speed and preferred method of learning. Teachers must be proficient in using data-driven insights to modify and improve lesson plans to meet the expectations of this new level of participation. Regular work will be automated by AI, but as instructors take on more responsibilities in managing digital learning platforms and tech integration, there will be a need for continuous upskilling.

The Yale Wave essay examines automation and optimization as a means of examining AI's effects on education. AI will simplify administrative duties like scheduling, grading, and classroom administration, freeing up instructors' time for individualized instruction. However, AI won't replace teachers. The article also

presents AI tutors, which are flexible software applications that track students' progress and offer immediate feedback. To guarantee that these AI systems are properly assisting pupils, this changes the educator's duty to that of a mentor or guide. Future educators will probably contribute to the development and improvement of AI algorithms for use in the classroom, creating instruments that identify student needs and foster better learning environments. These duties require that educators possess not only tech literacy but also a sophisticated comprehension of AI's educational potential and constraints.

The future role of educators in educating students for a job centered around AI is highlighted in this article. Education will need to change as AI continues to impact different businesses to give students AI-relevant skills like creativity, problem-solving, and critical thinking. The demands of the workforce will need educators to create curricula that not only educate students on how to work with AI but also how to flourish in a world where AI-driven decision-making is the norm. Teachers will take on the role of coaches, assisting students in navigating AI-enhanced learning settings. To bridge the divide between AI technology and human-centered learning, educators must develop strong interpersonal skills to balance the technical and emotional demands of their pupils. Furthermore, as AI-driven educational models take shape, there will be a greater demand for ethical frameworks and conversations, which will require teachers to play a major role in developing as these technologies advance.

It is evident from all the papers that the use of AI tools alone will not be sufficient to shape education in the future; instead, educators will need to take on new duties related to data analysis, AI management, and ethical concerns. Teachers will no longer have to perform mundane duties thanks to AI; instead, they will be able to concentrate

on leading pupils through more sophisticated learning environments. Employment opportunities will arise in areas such as pedagogical AI tool development, AI systems integration, and ethics in education. Educators who adopt these modifications will not only stay pertinent but also prosper in the future when artificial intelligence enhances and magnifies their teaching abilities. Because of this, the main obstacle facing educators will be continuing professional development to become AI literate, understand how to deal with AI-driven platforms and create curricula that impart the skills required for a job that is changing quickly. In addition to completely redefining student learning, AI will also profoundly alter the way educators educate, necessitating the development of tech-savvy and emotionally aware instructors in this new educational environment.

CHAPTER 3. METHODOLOGY

Research Design

To know how AI affects creators and educators, the research group decided to use Semi-Structured interviews to explore diverse perspectives, and detailed insights and adapt questions based on participant responses, enabling the discovery of new findings. Our second method of choice was snowball sampling via social media, the authors utilized social platforms for including participants who may not be easily accessible through traditional sampling methods, consequently accessing hidden populations, reaching the educators who face the new challenges AI has introduced. The final approach was data saturation, to continue sampling until redundancy. In addition, the researchers used a comparison method to compare different levels of educators ‘perspectives.

Sources of Data

As the research ensued, the authors concluded that the focal point of our studies would be from an educator’s perspective rather than creators, due to the occupation in our daily lives. As a result of our verdict, the authors surveyed eight educators. Not only did the authors interview contracted professors from our university, but the authors also interviewed teachers ranging from elementary school to college.

Data Collection and Transcription

The primary data collection method used in this study was semi-structured interviews which provided flexibility for gathering context-specific insights from educators at different levels. The interviews had a predetermined set of questions about AI's role in education, ethical considerations, and originality. For the comparative analysis, the research group interviewed two college professors, four high school teachers, one elementary school teacher, one media creator, also an English teacher, and one visual creator. All interviews were recorded, transcribed, and analyzed for themes and patterns that correspond to the research questions.

Workplace	Occupation	Educating Experience	Name	Code
Wenzao Ursuline University	Educator	About 15 years	Jian Hong Lin	PL
Wenzao Ursuline University	Educator	About 10 years	Yuan Ming Chiao	PC
Ximen Elementary School	Educator	About 40 years	Pi Lin Xiao	EX
Kuang Hua High School	Educator	About 13 years	You An Lin	HL
Chang Jung High School	Educator	About 28 years	Yi Yi Xu	HX
Zhong Shan High School	Educator	About 8 years	Zhen Hao Lan	HLA
Zhong Shan High School	Educator	About 12 years	Rong Jun He	HH
Personal Online Platform	Educator also Media Creator	About 4 years	Shi Bung Chen	C

Table 1. Information regarding interview

CHAPTER4. Data Analysis – A Comparative Approach

The primary objective of this study is to find out how Artificial Intelligence can help to create education and specifically how AI affects different educational levels. This chapter compares the perspective of teachers from elementary、junior high、senior high school and university levels to understand the variations in how AI influences creative expression**,** and the ethical issues it raises for education at these levels.

Comparative Analysis Aligned with Research Questions

In this section, the authors compare the education levels of educators by probing common themes and differences in the perceptions, and use of Al in fostering creativity, originality, and addressing ethical concerns. The authors analyze how educators approach the different challenges and potential offered by Al at the elementary, high school, and different challenges and potential offered by AI at the elementary, high school, and university levels by tailoring their approach to the needs of their students and the context in which AI is used. In this comparative analysis, the authors will present a deeper understanding of the evolving role of AI in education and the different impacts it has on student's learning experiences.

How does Al foster or inhibit creativity at different educational levels?

Literature Review Context: In technological mediation of creative expression, previous work expresses that AI improves creativity through the automation of tasks and support for content generation. AI may be able not only to "shorten creative

processes" and "merge diverse styles" into new forms of expression but also to assist in this process or simplify elements thereof. In the literature, however, such overdependence on Al is also subject to criticisms that it may make school a less creative place than otherwise by taking away from students' 'critical thinking' and 'independent learning'. [17]

Our Research Findings: Our research is more nuanced and context-dependent than the literature and offers a more nuanced view of how Al impacts creativity at different educational levels.

According to Teacher Xiao, at the elementary school level, Al mainly helps students who have difficulty with language to produce content more quickly. According to her, 'Al should not replace the personal touch of students' creativity,' and students need to be able to develop their voices. It complements the literature that mentions AI as a tool for expression but with the caveat of younger learners.

Mr. Ho and Mr. Lan also mentioned at the junior and senior high school levels that students rely too much on AI to complete assignments without critical thinking. Mr. The literature has raised concern about AI encouraging a passive approach to creativity, and Lan agreed that "students often submit AI-generated work without thinking about the material." The literature typically addresses this risk, but our findings bring it to life with real-world examples from educators.

Speaking at the university level, Professor Lin said that AI can stimulate creativity as a 'brainstorming partner,' but warned about students relying too heavily on the

[17] chapter 2 authorship attribution and ethical concerns

technology. AI should help, but not replace, human creativity, a sentiment that echoes larger concerns from the literature about how technological progress tends to move faster than the ethical and legal frameworks necessary to police it.

Interim conclusion for How does AI foster or inhibit creativity at different educational levels?

Unlike the literature, which discusses the overall benefits and risks of AI, our work fills in the details by illustrating how such dynamics differ by educational level. While AI can help support students' creativity, the ability of AI to stifle originality and engagement rises as students move through various stages of education. The existing literature does not fully explore this context specific impact.

How do educators at different levels balance AI-generated content with authorship attribution?

Literature Review Context: The literature in Section on Ethical Consideration and Legal Frameworks addresses the ethical problems Al poses to creativity, chiefly on authorship attribution and required rules. The literature is concerned with how to reconcile AI contributions with human originality around maintaining transparency in the use of AI. As some researchers say that Al should be seen as a collaborative partner and not an independent author, the proper guidance needs to be attached to prove the student as the creator of his work.

Our Research Findings: However, the literature offers some theoretical justification for these ethical concerns, but our research reveals how educators at various levels handle Al-generated content.

Teacher Xiao said at the elementary school level that AI can be useful for brainstorming but that students must 'openly admit that they used AI to help with their work.' The literature has been saying this should be transparent, but Xiao's experience adds a practical dimension in showing how early education teachers are already doing this. Mr. Ho says that at the high school level, students tend to not engage with the material when they rely too much on AI, which raises ethical concerns about the authenticity of the work. It corresponds to the literature`s worries about AI taking human agency in creativity away. Our findings also echo the need for explicit guidelines about how much AI assistance is acceptable. Professor Lin also suggested that AI should be seen as a "collaborative partner" at the university level, which aligns with discussions in the literature. Instead, he suggested that AI should be credited

without diminishing human authorship. Professor Chiao added that "students must have full creative control over the work and acknowledge the contributions of AI."

Interim conclusion for How do educators at different levels balance AI-generated content with authorship attribution?

Our research offers concrete examples of how educators navigate transparency and ethical authorship, while the literature discusses the importance of transparency and ethical authorship. Elementary educators are very interested in transparency, while at the university level, more formalized frameworks for collaboration between AI and human creators are needed. It shows that issues of maintaining academic integrity are of common concern across levels of universities, and they are willing to use AI`s potential.

How does AI affect students' originality across educational levels?

Literature Review Context: In the section on Technological Mediation in Creative Expression, the literature highlights the ways that AI can support creativity, helping students to generate ideas and structure their work. It also warns of the risk that AI will make students less original by encouraging shortcuts that short circuit deeper engagement. But there's a concern that students might let AI do the work for them because it's 'convenient', at the expense of building their own creative voice. AI can "commodify creativity" according to some studies, and it can "commodify creativity" and strip human agency from the creative process.[18]

Our Research Findings: Our study builds on these discussions but adds new insights into how AI affects originality differently across educational levels:
In elementary education, Ms. Xiao observed that AI can support students in structuring their ideas, but she stressed that it must be used sparingly to avoid stifling natural creative development. She mentioned, "AI helps with structure, but the students must still add their unique voice," aligning with the literature's caution about balancing AI`s assistance with maintaining students' originality.

In junior and senior high schools, Mr. Lan shared concerns that students often use AI to produce work quickly, without developing a deeper understanding of the material. He remarked, "AI-generated content is convenient, but it risks creating a culture of

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shortcuts where students don't engage in authentic learning," reflecting the literature`s warning that AI can undermine originality by providing easy solutions.

At the university level, Professor Lin raised a legal and philosophical concern about the relationship between technology and regulation. He noted, "The law is a slow process, but technology is a quick evolution. It's hard to use the old regulations to regulate new technologies," emphasizing that if legal frameworks are to adapt, it will depend on "new technology users if they are powerful enough." This highlights the challenges of regulating AI`s influence on creativity through outdated laws. Mr. Chen, from a media creation perspective, supported this view, stating that "AI can assist with content generation, but it should not overshadow the human touch," further reinforcing the need for balance between AI’s capabilities and human creativity.

Interim conclusion for How does AI affect students' originality across educational levels?

Our research offers a comparative look across educational levels, while the literature describes the risks of AI undermining student originality. This risk moves from providing an environment for creative development in elementary education to an issue of more serious concern about academic honesty and the degeneration of human agency in higher education. This comparative insight adds to the discussion of how students' capacity to deal with AI`s impact on originality changes throughout the educational system.

What are the ethical challenges associated with AI use in education, and how do they differ by educational level?

Literature Review Context: The literature on ethical considerations and legal frameworks discusses existing AI-related laws in the U.S. China and Taiwan, such as copyright issues or national education programs for AI. It is obvious from this collection of literature that there is still too little legal regulation of AI in existing societies. As a result, it is necessary to call for clear guidelines to ensure transparency and for the development of global ethical frameworks that can address these evolving challenges. However, most of these discussions are theoretical and broad in scope.[19]

Our Research Findings: Our findings complement the literature by providing a more practical, context-specific view of how ethical concerns manifest across different educational levels:

At the elementary level, Ms. Xiao pointed out the importance of being clear about using AI. She said, "students need to know the difference between using AI as a helper and depending on it completely." This idea fits with the call for ethics in the literature, but Ms. Xiao's take brings it to a practical issue in early education. She focused on teaching kids to recognize AI's role in their work, making sure they don't become too reliant on it.

In junior and senior high, Mr. Ho and Mr. Lan were worried about students misusing AI to avoid learning. Ho said, "Students might use AI in the wrong way to

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skip engaging with the material," echoing concerns in the literature about the ethics of using AI versus doing work themselves. Mr. Lan suggested stronger rules to keep students from depending too much on AI, emphasizing the need for academic honesty and keeping students involved in their learning.

At the university level, Professors Lin and Chiao brought up deeper ethical concerns. Professor Lin talked about how fast AI is growing, saying, "AI is moving ahead quicker than the authors can regulate it," which lines up with discussions in the literature about how law struggles to keep up with tech. Professor Chiao agreed, pushing for "teaching students to use AI responsibly and think critically," reflecting the broader call for a global ethical approach to handle the challenges AI brings to education.

Interim conclusion for What is the ethical challenges associated with AI use in education, and how do they differ by educational level?

The literature gives a general look at the ethical challenges of AI, but our research shows that these issues differ a lot depending on the education level. In elementary schools, the focus is transparency. In high schools, the big concern is keeping academic honesty. At the university level, the concerns get wider, covering things like data privacy and the commercialization of creativity, showing the need for a more complete global ethical approach.

Comparison with Existing Literature

This analysis backs up much of what the current literature says about AI's benefits and challenges in education but adds fresh perspectives, especially on how AI's effects change across different educational levels. For example, many studies talk about how AI can boost creativity and speed up tasks like brainstorming. Similarly, educators the authors spoke with, like Ms. Xiao, noted that AI can help elementary students organize and express their ideas better, which enhances creative thinking.

A big takeaway from this study is its focus on comparison, showing that AI`s role gets more complicated as students move through different levels of education. High school teachers, like Mr. Lan, pointed out concerns about students using AI for quick fixes, which is not something that's been looked at much in research on younger learners. Plus, Professor Lin`s warnings about the commercialization of creativity and how it can limit human input offer new insights that are often missing in broader talks about AI in education.

Also, while existing research often calls for ethical guidelines for using AI in schools, this study goes a step further by showing the real ethical challenges educators deal with every day. For example, Professor China's push for global ethical frameworks is in line with past research, but our study builds on this by highlighting the practical struggle of balancing AI`s benefits with the need to keep academic honesty intact at different educational stages. This makes it clear that the authors need to rethink how the authors teach and the legal rules around AI to keep up with fast-changing technology.

In conclusion, this comparative analysis deepens our understanding of AI in education. While AI`s creative benefits are well-known, issues like the loss of originality and ethical concerns in higher education haven't been explored as much. This study adds detail to the existing literature by showing how educators' views on AI vary depending on the level of education and the specific challenges their students face.

Summary

In this study, the authors tried to find out how AI affects creativity, ethics and originality at different levels of education using a comparative approach. Teachers from elementary school, high school, and university shared their perspectives on how AI affects teaching, and how students interact with their work.

For all levels, AI was appreciated for increasing creativity and saving time. It was used in elementary schools to help students with language, in high schools and universities, the technology was used to generate and organize content. But there were worries that students might get too reliant on AI. Mr. Ho and Mr. Lan, both teachers, said that students commonly used AI as a shortcut to avoid deeper thinking. Professor Lin also felt that AI could rob people of originality and turn creativity into something you could buy and sell.

Another problem was ethics. For elementary teachers, the focus was on using AI responsibly and being transparent; for high school and university educators, it was about the need for clear ethical guidelines for handling things like data privacy and who gets credit for AI work.

The study demonstrates that the teaching methods must be changed by the student's age and development and urges strong ethical and legal rules to avoid AI being misused. At the end of the day, AI can enhance creativity and productivity, but it must be fair and balanced with solid ethical principles to safeguard human creativity and real learning.

CHAPTER5. CONCLUSION

After the study, the researchers come up with the answers to the research questions.

1. How does AI influence creative expression?

According to the research analysis, it shows that Artificial Intelligence has become a daily creative assistant. It helps people shorten the time it takes to create and through personalized assistance, creators can complete their work more efficiently and professionally. However, this has also led to an over-reliance on AI and a decrease in originality. In the elementary school environment, it is conducive to basic learning, but in education after high school. There is a decrease in independent thinking and the quality of students' work gradually declines.

2. How to achieve the balance between AI generation content and author attribution?

In higher education settings. The advent of Artificial Intelligence has led to an imbalance in the use of technology. The research on balancing AI and author attribution is to improve AI norms and transparency in the use of AI so that it can maintain human originality and give readers enough trust.

3. How to develop ethical guidelines for the application of AI in educational creativity to prevent abuse in the creative process?

The best way to do this is to develop a global standard to ensure infringement in the creative process, from establishing basic transparency in the use of AI and public labeling to developing laws that regulate the creative aspects of AI, such as originality、academic integrity, and intellectual property.

4. What possible challenges will be faced in the future?

With the growth of Artificial Intelligence, human independent thinking has declined, and even the legal norms cannot completely prevent the problem of the creator's over-reliance on Artificial Intelligence. With the speed of technological advancement, people have not been able to legislate at a faster pace, which has led to the law regulating the use of Artificial Intelligence will remain in a vague phase. Finally, it will also cause a huge change in the job market, except for the educational environment, all the work environments are affected by the emergence of Artificial Intelligence, and how to adapt to this new change will be a situation that all professional fields need to overcome.

The contribution of this study can be divided into three parts, the first one is the impact of AI varies depending on the level of education. The analysis of the study provided information on the actual situation of educators at various stages of AI influence on students' creativity. Recognized the benefits of AI for student creativity and the suppression of independent thinking. The second is that humans need a specific framework for using AI. This study emphasizes the fact that AI should be a tool for human assistance rather than a substitute for human thinking. The laws nowadays still do not have enough rules to regulate the use of this technology, so better rules need to be created to regulate it. For example, transparency policies. The last one is that AI uses ethics, and lawmaking requires collaboration between educators and legislators. This research shows that educators are more important than ever in teaching students to use AI tools. They are the ones who are most directly exposed to the impact of this technology on students. Therefore, educators need to act in this area, such as providing additional curriculum training and programs from the Department of Education.

In conclusion, this research emphasizes the dual role of AI in education: while it can help to significantly improve creativity and efficiency, it also poses ethical and

pedagogical challenges. Given the rapid growth of technology, human law cannot keep up. People need to adopt a nuanced, multi-layered approach to address these challenges, combining education and developing strong ethical and legal frameworks to safeguard both ethical and legal conduct. The most important thing is to educate students to take it upon themselves to use AI as an assistant tool not abusing. In this sense, the study ends by calling on educators, policymakers, and technologists to work together to shape the future role of AI in education in such a manner that AI can contribute to rather than eradicate creativity and learning from humans.

What's more, the researchers would like to express their gratitude to ChatGPT, which provides valuable insights, and the information is helpful for the researchers to complete this paper.

[20]APPENDICES

Appendix 1[21]

I. Artificial Intelligence in Creative Collaboration and Education

Introduction:
The authors would like to understand the application of artificial intelligence in the educational environment and how it influences creative expression and collaborative creation. The following questions are designed to explore your experiences and views in this area.
1. How do you think artificial intelligence affects creative expression and collaborative creation in the educational environment? Could you share any specific experiences? In your experience, how does AI play a positive or negative role in teaching and creation?
2. Has artificial intelligence changed your perception of originality in your field? Do you think there should be better guidelines to regulate the role of AI in creation?
3. How has artificial intelligence assisted or challenged your creative/teaching process? What positive or negative experiences have you encountered?
4. Do you think AI can become a 'co-creator' in education and creation in the future? What impacts might such a change bring?
5. What role do you expect AI to play in creative education and collaborative creation? What developments do you hope to see in the future?

II. Ethical Considerations

Introduction:
The use of artificial intelligence in creative activities often raises various ethical issues. The authors would like to hear your views on these issues and your personal experiences.
1. What do you think are the main ethical challenges when using artificial intelligence in creative activities? Have you encountered any related practical difficulties?
2. If AI takes on a more active role in creation in the future, how should people define its 'creator' status ethically? Will such a recognition affect our moral standards for creation?
3. If AI can mimic or recreate human creative styles, how do you think people should handle this technology ethically? Should such imitation be subject to some form of restriction or protection?

[20] The whole interview transparency is all sorted by ChatGPT.

[21] This part is Interview questions

4. From an ethical perspective, how important is transparency in the use of AI in the creative process? Do creators have an obligation to disclose the extent of AI involvement to the audience? Why?

III. Legal Framework

Introduction:
The legal regulations surrounding AI-generated content are not yet clear. The authors would like to hear your views and suggestions on the direction of future legal development.

1. Current legal regulations on AI-generated content are immature. How do you think the law should develop in the future to better adapt to the application of AI in the creative field?
2. How do you think the law should balance AI-generated content with human original works? Are there any specific legal measures or principles that you think should be introduced?
3. For AI-generated creative works, if there are issues of infringement or copyright disputes, how should the law define responsibility? Do you have an ideal solution or handling principle?
4. If new laws could be made, which aspects of AI-generated content do you think need the most regulation or protection? Why?

Appendix 2[22]

An Interview with Professor Lin

Professor Lin, a university-level educator, provides an insightful perspective on the role of AI in educational creativity. With extensive experience in academia, Lin offers a nuanced view of how AI influences the creative process while raising concerns about the ethical implications and challenges surrounding originality in AI-assisted education.

AI's Role in Educational Creativity

Lin views AI as a powerful tool that aids students in realizing their creative potential. He acknowledges that AI simplifies many tasks, such as generating content, structuring projects, and automating repetitive elements. However, Lin emphasizes that AI should function as an assistant, rather than replacing human creativity altogether. He expresses concern that as AI becomes more advanced, humans might shift from being active creators to passive "passengers," with AI handling the bulk of the creative process.

Lin's position reflects broader concerns about the balance between technological mediation and human agency in creativity. While AI has made it easier for students to express their ideas, he warns against over-reliance on AI, as it could undermine students' development of critical thinking and creative problem-solving skills. AI`s role, according to Lin, should be to support human creativity, not overshadow it.

[22] This part is Interview analysis

Impact on Originality and Creative Expression

The advancement of AI has blurred traditional definitions of originality, especially in academic settings. Lin points out that AI`s ability to generate content challenges the notion of what constitutes original work. In his view, it's becoming increasingly difficult to determine how much of a project is the result of a student`s creative input versus AI`s assistance.

Lin advocates for clearer guidelines that define how AI should be used in educational contexts. He suggests that while AI can assist in generating ideas or organizing content, it should not be allowed to complete entire projects on behalf of students. He warns that over-reliance on AI can dilute the authenticity of students' creative expressions and reduce their engagement in deep learning processes.

Ethical Challenges in AI Use

A key ethical challenge Lin identifies is the question of authorship and ownership in AI-generated content. In his view, determining the true creator of a project becomes problematic when AI plays a significant role. He believes it is essential for students to be transparent about how AI contributed to their work, ensuring that there is no confusion about what part of the project was human-generated versus AI-generated.

Lin also stresses the need for a robust ethical framework to regulate AI`s use in education. He suggests that AI should be considered a collaborative partner in the creative process, with clear guidelines ensuring that students maintain control and authorship over their work. This approach will protect academic integrity while allowing students to benefit from the advantages AI offers.

Balancing AI`s Benefits with Human Creativity

While Lin recognizes AI's potential to enhance creativity, he remains cautious about its long-term effects. He advocates for a balanced approach, where AI serves as a co-creator but does not dominate the creative process. His perspective aligns with the idea of collaborative creativity, where humans and AI work together to produce results that neither can achieve alone. However, Lin is firm in his belief that students must retain full control over their creative endeavors to avoid becoming too dependent on AI.

Conclusion

Professor Lin`s analysis sheds light on the complex role AI plays in education. While AI offers undeniable benefits in terms of efficiency and creativity, it also poses significant challenges regarding authorship, originality, and ethical considerations. His insights suggest that educators need to establish a balance between leveraging AI`s capabilities and ensuring that students continue to take ownership of their creative work. This balance is essential for preserving academic integrity and fostering genuine creativity in an era increasingly influenced by AI.

An Interview with Pro.Chiao

Professor Chiao, an experienced academic, provides a detailed perspective on how AI influences creative expression in educational settings, its implications for academic integrity, and the ethical challenges it introduces. His views emphasize a balanced approach where AI supports human creativity without overshadowing it, promoting a collaborative model that maintains human agency and critical thinking.

AI`s Role in Creative Expression and Educational Research

Professor Chiao views AI as a ‘valuable assistant’ that can significantly enhance students` ability to express their ideas creatively. He stated, “AI tools, such as ChatGPT, can aid in brainstorming, organizing ideas, and expanding on initial concepts.” He emphasizes that this support is particularly beneficial for students who struggle to articulate their thoughts clearly. For more advanced students or researchers, AI can refine and polish their work, suggesting improvements and offering diverse perspectives that may not have been considered otherwise.

He noted, “Students can use AI to generate initial drafts or structure their research papers, thereby saving time and allowing them to focus on more complex analytical tasks.” However, he also stresses that AI should not be used to ‘complete assignments in their entirety’, as this diminishes the educational value of the process. Instead, it should function as a ‘creative partner’ that enhances the quality of the output while ensuring that the core ideas and direction remain student driven.

Impact on Originality and Student Engagement

Professor Chiao raises concerns about the impact of AI on the concept of ‘originality’. He remarked, “AI’s ability to generate content blurs the line between authentic student work and machine-assisted outputs.” This poses a challenge in educational settings where original thought and personal expression are key learning outcomes. For instance, he has encountered cases where AI-generated content made it difficult to assess how much of a project was a student’s genuine effort versus AI’s assistance.

He advocates for clear guidelines that delineate acceptable and unacceptable uses of AI in academic work. “While using AI to organize ideas or enhance language fluency could be allowed, relying on AI to produce complete paragraphs or perform detailed analysis will cross the line,” he explained. This ensures that students engage deeply with the material, promoting learning and understanding rather than mere completion of assignments.

Ethical Challenges: Authorship and Ownership

One of the key ethical challenges Professor Chiao identifies is the issue of ‘authorship and ownership’ in AI-assisted content. He explained, “When AI tools significantly contribute to a project, determining the true creator becomes problematic.” This ambiguity could lead to confusion about who should receive credit for the work, particularly when AI-generated content is used without clear attribution.

To address this, Chiao proposes that academic institutions establish a ‘formal framework’ for acknowledging AI’s role in content creation. “This could include guidelines for citing AI tools and defining the boundaries of AI assistance,” he suggested. For example, a student might be required to indicate which sections of a

paper were AI-generated and which were original contributions. This approach will help maintain transparency and respect for intellectual property rights, ensuring that both human and AI contributions are properly recognized.

AI as a Collaborative Partner, not a Replacement

While Professor Chiao acknowledges AI's potential to facilitate creativity, he is cautious about over-reliance on these tools. He emphasized, "Students should remain the primary creators, with AI serving as a supplementary resource." This perspective aligns with his broader educational philosophy that values 'human agency and critical engagement' in the learning process. For instance, in collaborative projects, Chiao recommends using AI to "generate alternative perspectives or expand upon existing ideas," but insists that the final synthesis and interpretation must be conducted by students themselves.

He also discusses the importance of teaching students 'how to use AI responsibly', highlighting that educators should incorporate AI literacy into the curriculum. "This includes guiding students on effective ways to prompt AI, critically evaluate its outputs, and integrate AI suggestions into their work without losing their unique voice," he advised. By framing AI as a 'co-creator' Rather than a replacement, Chiao believes students can develop a healthy relationship with technology, using it to enhance rather than detract from their creative potential.

Long-Term Implications and the Need for Ethical Frameworks

Looking to the future, Professor Chiao foresees a growing divide between those who are adept at using AI and those who are not. He warned that this "'digital divide'" could exacerbate existing inequalities in education, as students with access to and

knowledge of AI tools will have a distinct advantage over their peers. To mitigate this, Chiao advocates for ‘equal access to AI technologies’ and ‘comprehensive training programs’ to ensure that all students have the opportunity to benefit from these tools.

He also calls for ‘international collaboration’ to develop a standardized ethical framework that governs AI’s use in education. “Such a framework should address issues like data privacy, bias in AI-generated content, and the potential for misuse,” he explained. For example, Chiao suggests that AI developers should be required to disclose the sources of data used to train their models, ensuring that AI outputs are free from discriminatory biases and misinformation.

Conclusion

Professor Chiao’s analysis underscores the complex role AI plays in modern education. While AI offers significant benefits in terms of creativity and efficiency, it also presents challenges related to ‘authorship, originality, and ethical use’. His insights suggest that the future of AI in education depends on finding a balance between leveraging its capabilities and maintaining the ‘integrity of human-driven learning’. To achieve this, educators must implement clear guidelines, promote responsible use, and advocate for ethical frameworks that ensure AI serves as a ‘supportive partner’ in the creative and educational process, rather than a substitute for human ingenuity.

An Interview with Teacher Chen

This analysis is based on an interview with Mr. Chen, an English educator and, experienced media creator who actively incorporates AI into his work. Chen's use of AI ranges from lesson planning to multimedia production, showcasing its potential to streamline processes and elevate the quality of educational materials. However, his insights also highlight the challenges AI presents in maintaining originality, ethical transparency, and adapting to evolving standards of content creation.

AI's Role in Creative Expression and Educational Content

Chen has utilized AI tools extensively to optimize his teaching and content creation workflow. He relies on 'ChatGPT' for drafting lesson plans and generating ideas for classroom activities. By simply inputting specific keywords, he can quickly produce a foundational structure for his classes, saving significant preparation time. For visual content, Mr. Chen uses AI to create illustrative images, and in video production, he employs 'advanced AI-driven video generators. One such tool allows him to record a short clip of himself speaking, and the AI then captures his facial movements and voice, producing a complete video from a provided script. This capability has transformed how he approaches video creation, allowing him to generate polished educational videos rapidly.

In addition, he employs 'automatic subtitle generation tools' to enhance video accessibility and viewing experience. Previously, adding subtitles was a labor-intensive task, but now, AI automates the process and only requires minor manual adjustments, significantly improving his productivity. Mr. Chen mentioned using both 'international tools like K' and 'region-specific versions like Jianyan, depending on the context and needs of the project.

The Impact on Digital Content Standards and Market Competition

While AI simplifies content creation, Mr. Chen also acknowledges its role in elevating market competition and shifting audience expectations. Before AI's widespread adoption, basic educational videos could attract an audience with minimal editing or production quality. However, as AI makes high-quality production more accessible, content creators must now meet a much higher bar to stand out. This is particularly true in the digital education space, where polished, AI-enhanced content has become the new standard.

He observes that platforms like YouTube and social media have been flooded with professionally produced educational content, even from individual creators, making it harder for average creators to gain traction. As a result, creators must focus on 'making their content unique and engaging' to compete. This dynamic shift means that AI has not only increased content quality but also the competitive pressure to constantly innovate.

Ethical Concerns: Authenticity and Proper Attribution

One of Mr. Chen's primary ethical concerns is the 'lack of transparency' in AI-generated content. He noticed that AI can significantly alter the style and flow of content, making it difficult for audiences to differentiate between the creator's original input and what was generated by the AI. He believes it is essential for creators to disclose when and how AI has been used, particularly in educational and research settings where originality and authenticity are critical.

For commercial creators, transparency is often overlooked, as audiences may not prioritize whether AI was involved in the creation process. However, Mr. Chen argues

that there should be a clearer standard for ‘AI involvement disclosure’, especially in academic and professional contexts. Failing to differentiate AI-generated content from human-created work can undermine trust and lead to ethical dilemmas regarding ownership and authorship.

AI as a Collaborative Tool, not a Replacement

Mr. Chen emphasizes that AI should be viewed as a ‘collaborative partner’ rather than a creator. While AI can handle repetitive tasks, provide inspiration, and even assist with multimedia production, the final creative direction and decisions should always rest with the human creator. He stresses that over-reliance on AI can stifle genuine creativity and diminish the creator’s role, making it crucial to maintain a balance between automation and human input.

For instance, in lesson planning, Mr. Chen uses AI to generate initial outlines but always customizes them based on his own teaching philosophy and understanding of student needs. He sees this approach as using AI’s strengths—speed and efficiency—without compromising the personal touch and adaptability that human educators bring to the table.

Legal Framework and Future Implications

In terms of legal considerations, Mr. Chen points out that ‘current regulations are inadequate’ for addressing the complexities introduced by AI in creative and educational content. He believes that future laws should establish clear guidelines for ‘AI-generated content ownership’ and ensure proper attribution, particularly in cases where AI could be used to create misleading or harmful materials. For example,

deepfake technology or AI-generated impersonations should be strictly regulated to prevent misuse.

For educational purposes, he suggests a more lenient approach, allowing AI to be used freely if it does not misrepresent the creator's capabilities or intentions. He emphasizes that AI should support educational goals rather than overshadow human input, and any misleading uses—such as AI-generated papers or exam answers—should be explicitly prohibited and penalized.

Conclusion

Chen's experiences illustrate the dual nature of AI in education and media: while it can significantly enhance creative expression and productivity, it also raises critical concerns regarding originality, transparency, and ethics. To fully leverage AI's potential without compromising educational integrity, clear guidelines and legal standards are needed to define its role. Educators and creators must remain vigilant in ensuring that AI complements human creativity rather than diminishes it, maintaining the balance between innovation and ethical responsibility.

An Interview with Mr. He

As a high school educator, he has been working in education since before AI was invented. Now he faces the impact of AI on students' learning. Here are his ideas and how to regulate the use of AI to make AI a good learning aid.

AI’s Impact on Creative Expression in Education

Mr. He believes that AI can significantly improve creative efficiency and reduce production time in educational settings, which allows students to quickly generate works such as presentations and collations. However, it can also weaken the student's basic training and reduce the chances of thinking and aesthetic training. While AI is a tool to aid creativity, originality is still critical. Respondents pointed out that AI-generated content should be properly guided and limited in the educational process to ensure that students still have the opportunity to develop independent thinking and creative skills. To that end, clearer guidelines are needed, particularly in referencing AI-generated content, ensuring efficiency without sacrificing the depth and uniqueness of creation.

Ethical Challenges in Using AI

Mr. He believes that AI is still a tool to aid creativity, and originality remains critical. They point out that AI-generated content should be properly guided and limited in the educational process to ensure that students still have the opportunity to develop independent thinking and creative skills. At the same time, respondents see a need for clearer guidelines, especially when it comes to referencing AI-generated content.

Balancing AI’s Benefits with Human Creativity

Mr. He wants the law to balance the relationship between AI-generated content and human-generated work and emphasize the need to clearly define the role of co-creators. They suggest there should be penalties for unlabeled AI-generated works to protect the rights of human creators. In the future legal framework, attention should be paid to the use of academic papers and design property rights to accommodate evolving AI technologies.

Conclusion

Mr., He believes that AI improves creative efficiency in education, but it can also leave students with a lack of thinking skills in basic training, so a balance of expertise and beauty is needed. AI should be seen as an auxiliary tool to promote student creativity and teacher growth. Ethically, major challenges include the proportion of creative generation and intellectual property rights, emphasizing that transparency in AI-generated content must be revealed. On the legal side, respondents called for future laws to clearly define intellectual property rights and related penalties to balance the relationship between AI-generated content and human originality and suggested introducing a definition of co-authors. Overall, respondents were open to the use of AI in education and creativity but stressed the need for caution in dealing with originality, ethics, and legal issues.

An Interview with Teacher Xiao

This analysis draws from insights provided by Ms. Xiao, an experienced elementary school teacher who has integrated AI tools into her classroom. Ms. Xiao shares her thoughts on AI's potential to support students' creative expression, the challenges it presents regarding originality and ethics, and the need for appropriate guidelines and regulations to govern its use.

AI's Impact on Creative Expression in Education

Ms. Xiao believes that AI has significantly shaped students' creative expression by serving as a tool that caters to diverse learning needs. For students struggling with language skills, AI helps them produce content more efficiently, thus building their confidence. For more advanced students, AI provides additional material for refining and enhancing their work. Overall, AI can boost creativity by streamlining the writing process and offering suggestions, but it should be used with caution to ensure that students continue to develop their voices and ideas.

Shifting Perceptions of Originality

The introduction of AI has raised questions about what it means for a work to be "original." Ms. Xiao argues that true creativity requires a unique, personal touch that AI alone cannot provide. She views AI as a brainstorming partner rather than a creator, emphasizing that while AI can offer initial ideas, it is up to the students to add their input to make the work truly unique. To maintain the integrity of creative learning, Ms. Xiao advocates for clearer guidelines that define the appropriate use of AI in the classroom.

Ethical Challenges in Using AI

One of Ms. Xiao's primary concerns is transparency when using AI. She noticed that some students' writing styles changed dramatically after using AI, raising ethical questions about authenticity and academic integrity. To address this, she believes that students should be encouraged to openly acknowledge when AI has contributed to their work. This practice can help differentiate between AI-assisted content and the student's creative efforts, ensuring clarity and honesty in their projects.

Defining AI's Role and Responsibility

Ms. Xiao sees AI as a collaborative partner rather than a creator. While AI can enhance the creative process by offering suggestions and performing repetitive tasks, the core responsibility and ownership should remain with the human creator. She stresses that students must retain control over their work to avoid becoming overly reliant on AI. This approach helps preserve the value of human creativity and prevents the blurring of lines between human and AI-generated content.

Legal Considerations and Future Directions

With current laws lagging behind technological developments, Ms. Xiao suggests that regulations need to expand to address AI's impact on content creation. She proposes that intellectual property laws should include specific provisions for AI-generated work, ensuring proper attribution and defining ownership rights. Additionally, there should be standards requiring creators to disclose the role of AI in their projects, which will help establish accountability and fairness in educational and creative contexts.

Conclusion

Ms. Xiao's perspective highlights both the opportunities and challenges of integrating AI into educational settings. While she acknowledges its potential to enhance creative expression and support diverse learners, she also underscores the need for clear ethical and legal boundaries. Educators must take the lead in ensuring that AI is used responsibly, fostering a learning environment where technology complements human creativity without compromising originality or integrity.

An Interview with Lan, a High School Geography Teacher

Senior high school educator Lan, based on his observations on students' use of AI in academic research, has proposed some legal frameworks and ethical norms that must be established for the future spread of AI.

AI's Role in Educational Creativity

According to Lan' responses, the role of artificial intelligence (AI) in educational creativity has both positive and negative risks. AI can quickly integrate data to help teachers and students learn and create efficiently and generate various teaching materials to improve lesson preparation efficiency. However, if students do not use AI properly, they may rely on copy and paste, weakening their ability to learn independently and affecting the originality of their creations.

Impact on Originality and Creative Expression

Mr. Lan believes that artificial intelligence (AI) can quickly integrate data and assist in the creation of an educational environment, such as AI graphics. However, this convenience can also lead to students relying on AI to lose their creative ability, especially if AI-generated content is used directly in their assignments without modification. Lan pointed out that as AI advances rapidly in writing, the originality of text may be threatened, so clear norms should be developed in the academic field to ensure the uniqueness and originality of creativity.

Ethical Challenges in AI Use

When it comes to ethical considerations, Lan mentioned the potential for AI to replace teachers, especially in the process of knowledge transfer and problem-solving,

which makes teachers challenging to compete with AI. In addition, when it comes to AI's creative identity, respondents believe that by clearly identifying the creator, the impact on creative ethics can be reduced. Lan also noted concerns about AI's ability to emulate human creative styles, arguing that the technology should be limited and protected to ensure that human creativity remains unique.

Balancing AI's Benefits with Human Creativity

Mr. Lan stressed that AI should be seen as an aid, not a subject of creation because creators are still human beings who use AI. For future developments, respondents hope to lower the threshold for AI operations to make them more widespread and emphasize human-friendly design to aid teaching and learning. In addition, the law should protect the rights of the original, especially in the process of generating content by AI, and ensure that users respect the intellectual property rights of the original.

Conclusion

The impact of artificial intelligence (AI) on education and creativity is two-sided. On the one hand, AI is a powerful tool that can process and integrate information quickly to improve the efficiency of learning and teaching; on the other, it can also reduce the originality of creation and raise ethical and legal challenges. Lan stressed the importance of clearly identifying creators and their level of engagement when using AI to reduce ethical issues such as plagiarism. In addition, in the face of the rapid development of AI technology, the law also needs to be adjusted accordingly to protect the rights and interests of the original and prevent the misuse of personal data. In general, AI should be seen as a complementary tool in creation and education, not a substitute for the existence of human creators. Future developments should focus on

developing clearer norms to balance the strengths of AI and the value of human creativity.

An Interview with Lin, a High School English Teacher

Lin, a high school English teacher with 13 years of experience, has been involved in AI-assisted teaching as part of the Ministry of Education's Digital Excellence Program. This initiative promotes the integration of AI tools in education to enhance teaching methods and foster student creativity. Lin's insights provide a valuable case study on how AI influences creativity in the classroom, while also highlighting the ethical challenges and educational implications of AI usage.

AI's Role in Educational Creativity

Lin identifies AI as a supportive tool in education, playing a significant role in simplifying tasks such as lesson planning, generating presentation outlines, and helping students clarify their creative ideas. For instance, Lin has used AI platforms to generate teaching materials and guide students in visualizing concepts through AI-generated imagery, musical compositions, and structured presentations. However, he emphasizes that AI should only be used as a tool for facilitating creativity, not replacing it. He stresses that human creativity must remain at the core of the educational process, with AI serving as an assistant to streamline tasks and provide inspiration.

Lin's experience echoes broader discussions on technological mediation in creative expression, where AI assists rather than supplants human agency in creativity. He believes AI can enhance the creative potential of students by helping them structure their ideas, but it should not be the dominant force in their learning process.

Impact on Originality and Creative Expression

The rapid advancement of AI has led Lin to reconsider traditional definitions of originality. AI tools allow students to generate content more efficiently, but they also blur the line between what is considered "original" human work and AI-assisted creation. This raises significant concerns in the educational context, where students may rely on AI to generate complete assignments, thus undermining their learning and critical thinking development.

Lin advocates for clearer guidelines in schools and competitions that delineate when and how AI can be used. For example, in student competitions, AI-generated content should be limited to outline creation or providing inspirational direction. Complete AI-generated works should not be permitted, as they do not reflect the student's creative input. This perspective aligns with concerns about over-reliance on AI and the potential reduction of critical thinking skills in students.

Ethical Challenges in AI Use

A major ethical issue Lin raises is the authorship and ownership of AI-generated content. When students use AI to generate work, determining the true "creator" becomes complicated. Lin believes that transparency is crucial, and students should openly disclose how AI contributed to their work. This is particularly important in avoiding plagiarism or the unintentional misrepresentation of AI-generated content as their own.

Moreover, Lin highlights the need for ethical frameworks that regulate AI's role in education. He suggests that AI should be identified as a collaborative partner rather than a creator, with strict guidelines to ensure that students maintain authorship over

their projects. This approach will help preserve academic integrity while still allowing students to benefit from AI's capabilities.

Balancing AI's Benefits with Human Creativity

While Lin acknowledges the potential of AI to enhance educational creativity, he is cautious about its long-term impact. He advocates for a balanced approach where AI serves as a co-creator that offers new perspectives without overtaking the creative process. His experiences align with the idea of collaborative creativity, where humans and AI work together to produce outcomes that neither can achieve alone. However, he warns that students must retain control over their creative processes to avoid becoming too dependent on AI tools.

Conclusion

Lin's perspective highlights the complex and multifaceted role AI plays in education, particularly in fostering creativity. While AI offers significant advantages in terms of facilitating creative thinking and simplifying certain tasks, it also poses challenges related to authorship, originality, and ethical use. His experiences suggest that educators need to strike a balance between leveraging AI's potential and ensuring that students retain ownership over their creative work. This balance is crucial for preserving the integrity of education and fostering genuine creativity in the AI era.

An Interview with Teacher Shu

The detailed conversation with the teacher shares many themes with Professor Shou's perspectives, particularly around AI's role, its impact on student learning, and the ethical challenges it introduces. Below is a more focused analysis that incorporates direct quotes from the conversation to illustrate these points in a clearer manner.

AI's Role in Educational Creativity: Assistant or Replacement?

AI is recognized as a tool that enhances productivity but should not replace human creativity. The teacher in the conversation stated that AI is mainly used for efficiency in their work: "我現在都是因為行政職的需要…有一些文案，或者是計畫…我會進去，問 AI 然後請 AI 寫個文案出來" ("I now use AI primarily for administrative needs…for drafting documents or planning. I use AI to create drafts when needed."). This indicates that AI is applied to stream Shoue's mundane or repetitive tasks, allowing the teacher to focus on higher-order thinking and evaluation.

Similarly, Professor Shou views AI as a facilitator that can help students brainstorm, organize, and refine their creative output. However, Shou stresses that AI should be an assistant in the process, not a creator in its own right. This caution aligns with the teacher`s statement: "AI 只是 1 個輔助而已，而不是全部" ("AI is just a support tool, not everything"), emphasizing that while AI can save time and help organize ideas, it should not overshadow the core creative process that comes from human effort.

Impact on Student Originality and Learning Engagement

A shared concern in both discussions is that AI might erode students' engagement and diminish the authenticity of their work. The teacher noted: "很多學生根本都不是

自己完成的，都是用 AI 寫的…我覺得更糟糕耶，因為會讓他們不用想了" ("Many students aren't completing work themselves; they're using AI to do it… I think it's even worse because it stops them from thinking altogether"). This statement reflects a deep worry that students are using AI as a crutch, relying on it to generate answers without engaging with the learning material.

Professor Shou echoes this concern by pointing out that AI blurs the Shoue between authentic and machine-assisted work, making it challenging to assess how much of a project is the student's effort versus AI's contribution. Shou suggests implementing a guide Shoue's that demonstrates acceptable uses of AI to ensure that students remain active participants in the creative process. The teacher's comments further support this need, as they have observed first-hand how students use AI to "速成的東西出來" ("produce quick, superficial results"), leading to a drop in genuine learning.

Challenges: Authorship and Ownership

Both Professor Shou and the teacher express strong concerns about authorship and the ethical boundaries of AI use. The teacher said: "真正的、真正的內涵，他們都不知道…因為他們並沒有去，真正去了解 AI 到底寫出來的是什麼" ("They don't know the true meaning… because they haven't tried to understand what AI is generating"). This highlights a critical ethical issue: when students use AI without comprehending its outputs, it raises questions about the authenticity and ownership of the work submitted.

Professor Shou similarly points out that when AI significantly contributes to a project, it becomes difficult to attribute authorship accurately. He suggests establishing

a formal framework that clarifies AI's role in content creation and ensures that students are transparent about AI-generated contributions. This is mirrored in the teacher's statement: "我覺得還是要尊重原創者，但是我不知道這個要怎麼去" ("I think we should still respect the original creators, but I don't know how to do it"). Both called for transparency and clear guide Shoue's to maintain the integrity of academic and creative work.

Balancing AI's Benefits with Human Creativity: Usage Should Depend on Expertise

An interesting point raised by the teacher is the generation gap in how AI is used. They believe that experienced educators can utilize AI effectively without compromising their expertise: "我們是已經都知道了…然後我們只是希望有 1 個工具來幫我們統整這樣統整跟分析" ("We already understand [the content]…we just want a tool to help us organize and analyze it"). In contrast, students, according to the teacher, lack the foundational knowledge and often use AI as a shortcut without comprehending the content it produces.

Professor Shou does not explicitly discuss the generation gap but emphasizes the need for students to develop critical AI literacy. He advocates for teaching students how to prompt AI effectively, critically evaluate its outputs, and integrate its suggestions without losing its unique voice. The teacher`s observation that "學生不是啊…你們不是想要去了解他，你們只是想要 AI 幫你們解決這個問題" ("Students aren't like us…you don't want to understand it; you just want AI to solve the problem for you") aligns with Shou`s concern that students are using AI superficially.

Long-term Implications and the Need for Legal and Ethical Frameworks

Both participants foresee a growing need for ethical and legal frameworks as AI becomes more integrated into education. The teacher acknowledged the lack of clear rules, stating: "這個秩序還沒有被定出來…慢慢的一步、一步的開始修，然後最後就會導入正軌" ("This order hasn't been established…step by step, it will eventually get on track"). Similarly, Shou calls for a global ethical framework to address AI's impact on data privacy, bias, and misuse, suggesting that AI's development is outpacing the ability of educational institutions to regulate it effectively.

The teacher also raises the concern that current intellectual property laws are not keeping up with AI`s development, like Shou`s call for clearer definitions of ownership in AI-generated content. Both agree that regulatory systems need to catch up, and educators must play a proactive role in shaping these frameworks to ensure that AI is used ethically and responsibly.

Conclusion

The analysis of the conversation and Professor Shou`s case study reveals strong alignment in their views on AI`s role and its implications for education:

- AI is a tool to enhance productivity and creativity but should not replace human agency.

- Over-reliance on AI can undermine critical thinking and authenticity.

- Clear guide Shoue's and ethical frameworks are necessary to ensure that AI serves as a supportive partner without distorting the educational process.

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