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Empowerment and Boundaries- Comparison of the Standards for AI Application in Education From the Perspective of International Organizations¹

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Abstract

The widespread application of digital technology has triggered profound changes in the field of education, promoting the innovation and transformation of the education model, and international organizations have deeply discussed and given creative suggestions on sensitive topics such as when and how artificial intelligence can be used in education.

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This paper focuses on the latest norms proposed by UNESCO, the OECD and the EU on the application of AI in education, and compares and analyses them in four dimensions, namely, focusing on the perspective, actual influence, degree of innovation, and focusing on preventing risks. Lastly, the international organizations provide useful references and guidance for the specific field of "generative AI", which covering teacher training, educational content standardization, data protection and ethical concerns. The comparison of the education policy recommendations of the three international organizations aims to help governments sort out the similarities and differences between the starting points, concerns and goals of different international organizations, and then clarify the relevance and feasibility of their recommendations.

Keywords- digital education, international organizations, education policy, applications, generative AI

1. Introduction

In the tide of the smart era, education has also undergone a sea change. With the increasing maturity of AI technology, can this technology be introduced into all application areas of education? Under what circumstances should it be encouraged? What kinds of application scenarios should we be cautious about? About the above questions, not only are education authorities, schools at all levels and various educational associations actively and enthusiastically discussing or experimenting with a mindset of walking on thin ice, but various international organizations are also collaborating across borders, sharing advanced experiences, and formulating norms and guidelines to promote the healthy development of AI in the field of education, and to contribute to the fairness and sustainable development of education.

This paper analyses the recommendations and norms of the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the Organization for Economic Co-operation and Development (OECD), and the European Union (EU) regarding the application of artificial intelligence in education. These three international organizations have created guidelines and standards for the use of AI in education. The documents offer valuable references and guidance for the development of educational policies and the global application of AI technologies. The three documents are:

UNESCO: Guidance for generative AI in education and research (2023.09)^[i]

OECD: Digital Education Outlook 2023-Towards an Effective Digital Education Ecosystem(2023.12)^[ii]

EU: Artificial Intelligence Act (2023.12)^[iii]

2.Multi-dimensional comparison of international organizations' norms on the application of AI in education

Three major international organizations, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Organization for Economic Co-operation and Development (OECD) and the European Union (EU) 2023, have all issued documents aimed at guiding the development of AI applications in education in a healthy and sustainable direction. These norms will be compared and analyzed in the following four dimensions.

2.1 Attention to differences in perspective

UNESCO's Guidance for Generative AI in education and research emphasizes the importance of comprehensiveness, inclusiveness, and collaboration in education policy-making. It highlights the need to consider the protection of human dignity and cultural diversity when formulating education policies and to prioritize the

human being in the appropriate regulation of AI. Additionally, it stresses the importance of transparency and public accountability in the use of AI to improve the quality and efficiency of education and research. The consideration of generative AI technologies in education policy should be objective and comprehensive. It is important to identify both explicit and implicit risks posed by AI technologies and implement controls to ensure their effective, fair, and sustainable application in education.

The OECD's report, 'Digital Education Outlook 2023: Towards an Effective Digital Education Ecosystem', focuses on enhancing the digital education ecosystem by improving data interoperability, incentivising education technology providers to incorporate interoperability standards through public procurement, and ensuring that privacy regulations do not hinder the identification of algorithmic biases. Advocating for the responsible use of AI in education, with an emphasis on educational equity and ensuring that all students have access to high-quality digital education. The focus is on data privacy and security to prevent data misuse and leakage. Continuous monitoring and evaluation of digital education policies are advocated to drive the digital transformation of education.

The EU's Artificial Intelligence Act is based on the philosophy of adopting risk-based regulation, advocating responsible research and innovation, and adhering to pragmatic governance. The Act aims to analyse characteristics, problems, objectives, and initiatives to formulate rules and distinguish general AI from basic models like ChatGPT. ^[iv]It also aims to establish a stricter regulatory regime for the latter. The application of AI technology is divided into four levels to ensure safe implementation in education by identifying risks and implementing fine-grained regulations. The Bill prioritizes data protection and privacy, and

highlights the importance of transparency, accountability, ethics, and legal frameworks in policy formulation. This ensures that the decision-making process of AI systems is transparent and has appropriate accountability mechanisms. Additionally, it ensures that AI systems used in schools adhere to ethical standards and operate within a legal framework.

2.2 Differences in actual impact

Against the backdrop of the current global development of artificial intelligence, countries and international organizations have formulated corresponding policies and norms on artificial intelligence education to guide and promote the healthy development of the industry. However, due to the different natures of international organizations, there are certain differences in the influence and binding force of these policies and norms radiated in the actual implementation process in various countries.

UNESCO primarily operates in the areas of education, science, and culture. Its proposed norms have a high degree of global consensus, but its binding force is relatively weak. Its resolutions and guiding documents are not as explicitly binding on member states as those of some other international organizations. UNESCO relies on member states to voluntarily comply with and implement its initiatives. The implementation of AI education policy norms varies across countries.

The OECD has significant influence on economic policy, providing policy research and data resources, and its recommendations have a global impact. As OECD member countries are mainly developed with high demand for digital education, these policy norms apply to them. However, policy norms may not have a direct impact on the development of AI education in non-member or developing countries with significant gaps in economic development, education systems, and

technological needs compared to member countries. It is worth noting that the OECD lacks legislative power, and its policy ideas are only recommendatory, allowing member states to selectively adopt and implement them.

The European Union (EU) holds more binding and influential power in the European region and its neighboring countries. It possesses legislative power and a range of authorities, including the European Parliament and the European Commission, which have the power to sanction and investigate member states. The main advantage of the EU in the development of Artificial Intelligence (AI) is to fully utilize the influence of the European integration market. In recent years, the EU has made efforts in AI governance by accelerating the promotion of AI legislation. The aim is to build 'regulatory barriers' with the first-mover advantage of high-standard ethical regulation and shape its global influence in the development of AI. ^[v]

2.3 Differences in the level of attention to innovation

Based on the stances of the three major international organizations, it is evident that they are closely monitoring the development and implementation of AI technology in the education sector. Furthermore, they all agree on the importance of promoting technological innovation while prioritising concerns such as equality and safety. This demonstrates the importance of balancing innovation and traditional ethics when promoting the integration and development of AI technology in education. It is crucial to fully utilise innovative technology while also considering human ethical values, in order to make substantial progress in education that aligns with moral standards.

The UNESCO Guidance for generative AI in education and research places great importance on the innovativeness of AI technology. It actively and continuously explores new application

scenarios for AI while emphasizing that technological innovation should be accompanied by consideration of ethics and social responsibility, particularly for new and emerging technologies such as AI. The guidance emphasizes the need for topics such as data privacy, fairness, and transparency to ensure the reasonable, fair, and sustainable development of technological innovation.

The OECD's Digital Education Outlook 2023 argues that students must be digitally literate and capable of applying technology to adapt to the needs of future societies and work environments. The report also advocates for the integration of AI technologies in education. The report emphasizes the importance of education policy and investment, highlighting the need for governments and educational institutions to focus on technology infrastructure development, teacher training, and curriculum design. It is important to note that the report maintains a balanced perspective and avoids biased language. Technological innovation encourages the expansion of learning opportunities and resources, and the optimal allocation of educational resources. This ensures that more students can enjoy high-quality educational resources, achieve personalized education, and promote educational equity.

The Artificial Intelligence Act of the EU adopts a cautious approach towards technological innovation. It emphasizes the importance of considering ethics, law, and safety while promoting technological innovation. The Act mandates compliance with relevant regulations and ethical standards in the application of AI to ensure that it does not have any negative impact on society. It is advocated that international cooperation and supervision be employed to promote the healthy development of AI technology.

2.4 Focus on risk variances

In the context of globalization and digitization, countries and regions prioritize risk prevention to ensure that scientific and

technological advancements benefit human society. The three major international organizations have identified risk prevention priorities in ethics, data privacy and security, digital divide, technology dependency, transparency, algorithmic discrimination, and fairness. This is a detailed analysis of the differences in risk prevention priorities among the three organizations.

UNESCO: emphasis on intellectual property risk, trust deficit risk, regulatory lag risk

Intellectual property risk: Generative AI models are constructed from large amounts of data, but this data is obtained from the Internet, and its use and dissemination are often without authorized permission from the owners of the data and information. If unauthorized data content is used to generate text, images, etc., there is a risk of being accused of infringing intellectual property rights.

Risk of trust deficit: The output of text, images, and videos generated by AI applications can often be difficult to distinguish between truth and falsehood, and the cost of creating fake news is lower. This poses great risks to the development of young people whose worldviews and values are still in the process of formation, especially if they lack a solid, systematic knowledge system and the ability to discern the authenticity of information.

Risk of regulatory lag: Technology legislation frequently fails to keep up with the rapid pace of technological development. In the absence of clear regulations and guidelines, companies that use generative AI are increasingly facing significant challenges in maintaining the security of their system operations. Although AI can enhance task completion, the lack of government oversight and regulation of companies providing generative AI services, along with the arbitrary access and use of data, necessitates appropriate legislation to safeguard the rights of individuals and organizations.

OECD: Focus on digital divide risks, mental health risks

Risk of the digital divide: In the digital age, the digital divide refers to gaps in access to and use of information and communication technologies between individuals, groups, or regions due to geographic, social economy ,and other factors. The OECD is committed to promoting the diffusion and application of digital technologies to reduce the inequality of digital educational resources among countries and regions.

Mental health risks: Excessive use of technology can cause social isolation among students, negatively affecting their mental health and learning outcomes, particularly for young learners. In some cases, AI tools may increase the workload of teachers instead of helping them, especially when these tools are not designed for and used in conjunction with educational teaching scenarios.

EU: Focus on career transition risks, transparency and liability risks

Risk of career change: The development of artificial intelligence (AI) systems in education has the potential to alter teaching methods and educational models, which may result in some teachers losing their jobs or changing careers. AI applications in basic education, such as automated assessment systems and personalized learning software, can reduce the need for teachers in certain areas. The digital education boom may result in a higher risk of unemployment among teachers. Therefore, policy measures are necessary to promote training in digital education skills and facilitate career transitions for educators.

Transparency and liability risks: Transparency is crucial in the technology sector to mitigate potential risks and enhance user trust. The EU prioritizes transparency and liability risks and reinforces regulations to ensure that tech companies adhere to the principles

of fairness, transparency, and responsibility in providing safe and dependable products and services. Simultaneously, providing users with clear explanations and information on how the system operates can enhance their trust in the system, reduce potential risks, and promote the sustainable development of AI systems.

2.5 Consensus on risk prevention in the three organizations

Data privacy risks: The promotion of digital education may involve the collection and processing of large amounts of personal data. Therefore, issues of personal privacy and data security are becoming increasingly prominent. Schools and educational organizations must ensure the security of the digital education platform and related systems to prevent any data leakage or system vulnerability that may lead to theft or misuse of personal data.

Risk of algorithmic bias: Generative AI models source their data from the internet. The model may be inclined to repeat topics and messages that frequently occur on the internet, which can limit and undermine the expression of diverse ideas and the effective voice of dissent. The model may be inclined to repeat topics and messages that frequently occur on the internet, which can limit and undermine the expression of diverse ideas and the effective voice of dissent. This can lead to the homogenization of the information that is searched for. In turn, areas lacking data have limited information and there is an implicit risk of further marginalization, which in turn affects equity and inclusion in education.

Risks of technology dependence: The growing dependence on technology in everyday life has resulted in an increased use of AI and other technologies. However, this may lead to an atrophy of human skills and agencies. It is important to avoid over-reliance on

AI systems as it may weaken students' ability to learn independently and think critically, especially with the widespread use of generative AI. The issue of preventing the negative impacts of technological advancements on human society has become crucial.

This chapter examines the most recent standards put forth by three educational organizations. It compares and analyzes them based on four dimensions: perspective, practical impact, innovation, and risk prevention. While the three documents share some common ground, each has its emphasis on different dimensions. To ensure the healthy development of AI technology, it is necessary to follow relevant regulations and ethics, advocate international cooperation and supervision, and prioritize risk prevention. The three major international organizations focus on risk prevention, with an emphasis on data privacy, algorithmic bias, and technology dependence. Therefore, when promoting the development of AI technology, it is important to consider and address the associated risks. The table below provides a simplified comparison of the three documents, highlighting their differences across multiple dimensions.

Table 1: Key Points Comparison of the Three Documents

Organization	UNESCO	OECD	EU
Name of report	Guidance for generative AI in education and research (2023.09)	Digital Education Outlook 2023-Towards an Effective Digital Education Ecosystem(2023.12)	Artificial Intelligence Act (2023.12)

Practical influence	There is a high degree of global consensus, but its actual binding force is weak.	Higher impact on digital education ecosystems in Member States, lower impact for non-Member States or developing countries.	Has a strong legislative role and member countries have to comply with its rules. However, it tends to be weak at influencing outside Europe.
Innovation focus	Focus on innovation and on topics such as data privacy, fairness, and transparency to ensure that technological innovations are reasonable, fair, and sustainable.	Openness, with governments and institutions focusing on technology infrastructure, teacher training and curriculum design. Optimising resources through technology promotes equality.	A cautious approach to technological innovation, with a concern for ethics, law and safety, and the promotion of international co-operation and oversight.
Risk prevention	Emphasis on intellectual property risk, trust deficit risk, regulatory lag risk	Focus on digital divide risks, mental health risks	Focus on career transition risk, transparency and liability risk

3. Policy Recommendations for Generative Artificial Intelligence Educational Applications: Special Areas, Special Attention

The rapid development of generative artificial intelligence has undoubtedly brought many conveniences, but it has also triggered a series of potential risks and challenges. In light of these challenges, it is crucial to take effective measures to minimize the risks associated with generative AI in the field of education. It is

equally important to avoid excessive constraints on technological innovation and industrial development. This has become an urgent issue in the field of regulation.

3.1 UNESCO's recommendations for policies on generative artificial intelligence and digital education

3.1.1 The regulatory framework for generative AI education and research should be improved to facilitate iteration and upgrading of generative AI. ^[vi]Government regulators have increased external oversight and regulation to guide and coordinate the design and evolution of generative AI through the development of policy and legislation. The policy framework should be consistent with the legislative and regulatory context of each country and continuously updated with newer iterations of AI technology to improve the applicability of existing regulations.

3.1.2 Educational institutions and enterprises should cooperate to develop and promote the application of generative artificial intelligence in education. Developers and users of generative AI should comply with relevant intellectual property laws responsibly and ethically. The aim is to provide general-purpose systems and applications that meet the needs of teaching, learning, and research while ensuring the safety and reliability of the products and services.

3.1.3 suggests strengthening the research and evaluation of generative AI in education to ensure its effectiveness and quality of application. Institutional users, such as educational institutions, should establish a sound internal assessment mechanism to effectively regulate and regularly audit generative AI tools. By taking necessary measures to protect user data security and automatically filtering inappropriate content, attention should be paid to the long-term impact of the application of generative AI in

education on students' creativity and critical thinking. By taking necessary measures to protect user data security and automatically filtering inappropriate content, attention should be paid to the long-term impact of the application of generative AI in education on students' creativity and critical thinking. By taking necessary measures to protect user data security and automatically filtering inappropriate content, attention should be paid to the long-term impact of the application of generative AI in education on students' creativity and critical thinking. This impact should be assessed and addressed accordingly.

3.1.4 The possible impact on creativity and critical thinking should be assessed and addressed as a means of improving the understanding and application of artificial intelligence in education, and promoting educational innovation and reform. Individual users must enhance their self-regulatory awareness and actions when using generative AI tools. If they come across any illegal generative AI programs, they must immediately report them to the regulators to ensure the legal and compliant application of AI technology. By promoting self-awareness and actions among individual users, we can collectively create a healthy and orderly environment for the application of AI.

3.2 OECD recommendations for policies on generative artificial intelligence and digital education

3.2.1 States should develop and widely disseminate guidelines on the application of generative AI in education. These guidelines should highlight the positive role of generative AI in education and propose solutions to issues such as algorithmic bias, privacy protection, and data security. When establishing regulatory frameworks, countries should opt for adaptive and forward-looking programmes to keep up with the rapid development of generative

AI technologies. It is important to avoid overly restrictive measures and instead adopt a framework that combines guidance and oversight. This will ensure sustained innovation, effective prevention and control of potential risks, and the implementation of accountability systems.

3.2.2 Governments should promote targeted teacher training programmes to enhance digital literacy for all. Practical applications of generative artificial intelligence should be included in these programmes to improve the digital literacy of teachers. Additionally, countries can launch specific training programmes that cover AI applications in technology and education, as well as related pedagogical and ethical aspects. For instance, training programmes could showcase how generative AI can enhance students' creativity or critical thinking. However, it is crucial to avoid inappropriate applications, such as using generative AI to grade students' work or provide feedback.

3.2.3 It is important to maintain a balanced approach, avoiding bias. Additionally, states should actively promote research on the use of generative AI in the teaching and learning process while monitoring its impact. Close collaboration between the education sector, AI development teams, and researchers can contribute to a deeper understanding of the advantages and challenges of this technology.

3.2.4 Governments should promote the sharing of information and best practices on the application of generative AI among educational institutions on a domestic and international scale. This text appears to already meet the desired characteristics and is error-free. Therefore, no changes have been made.

3.3 EU policy recommendations on generative artificial intelligence and digital education

3.3.1 The classification of AI systems can be divided into two categories: general-purpose and base-model AI systems. General-purpose AI systems have broad applicability, including but not limited to image and speech recognition, audio and video generation, translation, and other functions. Base models are AI system models that have been trained with large amounts of data and are highly adaptable. These models are typically represented by models such as the Chat-GPT model. The requirements for providers of base models in the EU must meet basic transparency. This includes being registered in the EU database, developing detailed technical documentation and easy-to-understand instructions for use, and establishing a quality management system, among other things.

3.3.2 The application of artificial intelligence technology is classified based on the level of risk as 'unacceptable' risk, high risk, limited risk, and minimal risk. By identifying various risks and implementing meticulous supervision, AI technology can be safely applied in the field of education. The Act recognises 'education' as an area where AI is actively applied and classifies it as a 'high-risk' category of AI application.

3.3.3 To ensure compliance with relevant regulations and standards, it is necessary to strengthen the regulation of generative AI systems (3.3.3). To ensure the security and privacy of user data, it is important to strengthen data protection. This can be achieved by adopting security measures such as encryption for data storage and transmission to prevent unauthorised access. It is crucial to protect personal privacy and data security to ensure the healthy development of the digital age.

3.3.4 To enhance the transparency of generative AI systems, it is important to provide education and training to users. This should include knowledge and skills on how to protect the privacy of personal data, how to identify algorithmic biases, and how to interact responsibly with AI systems. Through education and training, users can gain confidence in using AI systems and become better equipped to monitor and participate in their development and application. This will improve their awareness of and ability to respond to potential risks associated with generative AI systems.

4. Conclusion

In summary, the UNESCO, the OECD, and the EU share a common interest in AI education policy norms. However, they differ in the extent to which they implement these norms. International organizations provide references and guidance for the field of generative AI. These norms contribute to the development of educational policies and the application of AI technologies globally, promoting the healthy development of AI in education and achieving equity and sustainability in education. The integration of technology and education has the potential to provide students with more personalized and efficient learning pathways. However, it also poses potential risks. Therefore, in the future, countries should develop AI education in accordance with their national conditions and international recommendations to improve the quality of education, promote educational equity, and modernize education.

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^[i]UNESCO(2023). Guidance for generative AI in education and research[EB/OL]. [2023-10-03]. <https://www.unesco.org/en/articles/guidance-generative-ai-education-and-research>

^[ii]OECD(2023). Digital Education Outlook 2023-Towards an Effective Digital Education Ecosystem[EB/OL]. [2023-12-13]. https://www.oecd-ilibrary.org/education/oecd-digital-education-outlook-2023_c74f03de-en

^[iii]European Union(2023).Artificial Intelligence Act[EB/OL]. 2023-12-08]. <https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence>

^[iv]Zeng Xiong, Liang Zheng, Zhang Hui. The Regulatory Path of Artificial Intelligence in the European Union and Its Implications for China-Taking the Artificial Intelligence Bill as the Object of Analysis[J]. E-Government, 2022, (9):63-72

^[v]Chen Jingquan. A Review of EU Artificial Intelligence Governance Policies[J]. Global Technology and Economic Outlook, 2023, Vol. 38(7):1-5, 20

^[vi] Lan Goshua, Du Shuilian, Song Fan, et al. Research Policy Planning and Innovation Path of Generative AI Education: Key Points and Reflections of UNESCO's Guidance for Generative AI in Education and Research[J]. Open Education Research, 2023, (6):15-26