Otto Federico von Feigenblatt
Oscar Yecid Aparicio Gómez
(Eds.)

Artificial Intelligence and Education: an Ongoing Dialogue



Octaedro Editorial

Artificial Intelligence and Education

An Ongoing Dialogue

Otto Federico von Feigenblatt
Oscar Yecid Aparicio Gómez (eds.)

Artificial Intelligence and Education

An Ongoing Dialogue



Octaedro

Title: *Artificial Intelligence and Education: An Ongoing Dialogue*

First published: May 2024

© Otto Federico von Feigenblatt, Oscar Yecid Aparicio Gomez (eds.)

© Ediciones OCTAEDRO, S.L.
C/ Bailén, 5 – 08010 Barcelona
Tel.: 93 246 40 02
octaedro@octaedro.com
www.octaedro.com

All rights reserved. This publication is copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of the copyright folderra.

ISBN (paper): 978-84-10282-04-9
ISBN (PDF): 978-84-10282-05-6
Legal deposit: B 10025-2024

Design and production: Octaedro Editorial

Printing: Ulzama

Printed in Spain

Table of Contents

Prologue 9
Otto Federico von Feigenblatt

Chapter 1. Exploring the Impact of Artificial Intelligence on Education from a Social and Anthropological Perspective 11
Otto Federico von Feigenblatt

Chapter 2. The use of ChatGPT as artificial intelligence in language teaching 27
Hugo Heredia Ponce, Lia Machado Fiuza Fialho, Manuel Francisco Romero Oliva

Chapter 3. The impact of AI in education: 120+ teaching tools and resources for classroom work 47
Miquel Àngel Prats Fernández

Chapter 4. Artificial Intelligence and education: why, how and what for 69
Juan Carlos Judikis Preller, Jordi Quintana Albalat

Chapter 5. *Homo technicus*: From *techné* to Artificial Intelligence 97
Oscar-Yecid Aparicio-Gómez, William-Oswaldo Aparicio-Gómez

Chapter 6. The Role of AI in Teaching Philosophy 121
Mathew J. Anderson

Prologue

The present volume explores the emerging impact of artificial intelligence in education. Artificial Intelligence is having a profound impact on education and one of the main challenges is that there is a lack of understanding about technologies by educators and educational leaders. The present book is interdisciplinary, and it is anchored in a first chapter focusing on an anthropological interpretation of artificial intelligence and its role in education. Artificial intelligence is conflated to previous technological revolutions and traditional social science concepts are employed to understand the relationship between technology, society, and the individual.

The second chapter aims to explore one of the most well-known exponents of artificial intelligence, ChatGPT, in relation to language teaching. This chapter homes in on specific applications of artificial intelligence in one of education's most challenging sub-fields, language teaching. Chapter two is followed by a very interesting overview of over 120 teaching tools that can be used for classroom work.

This chapter presents some of the many artificial intelligence applications already available for use I the classroom.

The second part of the volume focuses on the philosophical aspects of artificial intelligence. Chapter 4 explores the central questions in relation to artificial intelligence such as why it exists, how it can be used, and what for. Chapter 5 explores the relationship between humans and artificial intelligence from a philosophical perspective. Thus, artificial intelligence is placed in a context of ideas and in relation to profound existential questions central to our lived experiences.

In summary, this volume is an interdisciplinary exploration of a challenging topic which is affecting the way we understand education as a human activity. We hope that this volume will lead to further research about the impact of artificial intelligence from an anthropocentric perspective. The editors of the book are already working on several ancillary research projects focusing on specific aspects of the complex relationship between artificial intelligence and the human condition and we hope that the reader will find this volume inspiring, enlightening, and most importantly, intriguing.

Ambassador Otto Federico von Feigenblatt, M.A., Ph.D., Ed.D., A.L.M., Ambassador and Deputy Permanent Observer of the International Youth Organization to the United Nations, Advisor for Education Affairs to the Andean Parliament, Dean of Global Relations - Latin Division, Keiser University.

Everwise Hall, Palm Beach County, November 9th, 2023

Chapter 1

Exploring the Impact of Artificial Intelligence on Education from a Social and Anthropological Perspective

Otto Federico von Feigenblatt[1]

Abstract: The present introductory chapter explores social and anthropological aspects of artificial intelligence, with an emphasis on its possible effect on education. Basic theories of anthropology are applied to the concept of artificial intelligence to attempt to understand some of the positive and negative externalities of the integration of technology into teaching and research. Moreover, a tentative exploration of the possible impact of AI on educational leadership is also presented to explore the effect that it may have on institutional culture and structure.

Keywords: Artificial Intelligence, Applied Anthropology, Educational Leadership, Impact

1. Dean of Global Relations - Latin Division, Keiser University (Fort Lauderdale, Florida)
ofeigenblatt@alumni.harvard.edu
https://orcid.org/0000-0001-6033-6495

Introduction

The possible consequences of the ubiquity of artificial intelligence in all areas of life are simply overwhelming. Much of the contemporary attention focuses on the technological advancements and characteristics, with a narrow focus on uses or sectors of the economy (L. Chen, Chen, & Lin, 2020; X. Chen, Xie, Zou, & Hwang, 2020). Nevertheless, it is important to explore the macro - level impact that artificial technology may have on social and structural factors related to education and educational leadership. There are several issues that must be addressed. The relationship between humans and technology may be changing. The purpose and goals of education may have to be reassessed and finally, the stratification of the educational structure may be exacerbated by the rapid onset of the integration of artificial intelligence in education.

Even though artificial intelligence presents unique challenges, it is possible to extrapolate some valuable lessons from previous technological disruptions, such as a one brought about by the invention of the typewriter and the internet. Moreover, many of the changes taking place today are part of long-term trends brought about by the onset of globalization. Therefore, a macro - level exploration of the possible impact of artificial intelligence on education requires a look into the past, a broad overview of the present, and an adventurous glimpse into the future.

The present chapter explores some of the possible positive and negative externalities of an increased ubiquity of artificial intelligence, with a focus on educational leadership. A broad anthropological perspective is applied to recenter the debate around a human unit of analysis. The following section explores the philosophical premises from an anthropological perspective.

1. An Anthropological Perspective

The present exploratory chapter tackles the broad topic of the possible impact of artificial intelligence on education, and educational leadership in particular. It is possible to explore this topic from a range of perspectives. The most common focus is on the characteristics of the technology itself (Roll & Wylie, 2016). Nevertheless, anthropologists have a much broader conception of the importance of technology and its place in human societies (Macdonald, 2007). Physical anthropology and archaeology explore the development and use of technology as part of the human experience (Gao, Zhang, Zhang, & Chen, 2017). Thus, technology is simply defined as skills, methods, and tools used by human societies to adapt to the environment. This broad definition allows researchers to study technology in context and to keep the human at the center of any possible interpretation or analysis.

Even though there are many schools within the discipline of anthropology, a humanist approach to anthropology recenters discussion on the human experience. The concept of culture is also very helpful to explore the possible impact of technological changes. Technology reflects changing social needs and has a bidirectional relationship with culture. Culture may lead to technological changes, and technological changes may result in cultural changes. Therefore, the impact of technology cannot be understood as a direct causal factor leading to so-called "progress" but rather as a complex intervening variable among many other impacting society's functions.

An important aspect of technology which can be fruitfully explored through the lens of technology is its possible influence on identity formation. Technology and in particular, artifacts, can have a formative effect on roles

and status with a concomitant impact on class (Lujan, Nadal, Fash, Fash, & Hernandez, 2006). Symbolic interactionism helps us interpret the way in which artifacts can be used in interactions to communicate a wide range of meanings. Artifacts become symbols for something else. Moreover, technology can also be explored as a phenomenon, a process rather than simply an artifact. The case of artificial intelligence lends itself to a flexible approach, as it encompasses both a process and the required hardware.

2. Possible Negative and Positive Externalities

One of the misleading aspects of media coverage and public sphere coverage about artificial intelligence is that the new technology is "good" or "bad". This is clearly a false dichotomy because technology in an of itself cannot be attributed "good" or "bad" intentions. This problem is also seen in the debate over guns in the United States. The debate is over whether the "gun" or the person who uses the gun should be the focus of analysis. Clearly, certain technologies present dangers, but the analysis and discussion should be centered on humans rather than on an artifact. Decentering humans in discussions over technology fetishizes inanimate objects and ignores contextual factors.

A more holistic and constructive approach recenters humans and explores the possible positive and negative externalities of new technologies. The term "externality" borrowed from economics focuses on possible costs and benefits because of the introduction of a process or input. Thus, the discussion is focused on a neutral indicator rather than on value judgements. Understanding the possible costs and benefits of the introduction of a new technology

can fruitfully help us explore ways of constructively integrating it into sustainable societies.

First, we can explore a few positive externalities of introducing technology into the field of education. New technology can save a lot of time for teachers and professors as it can provide students with basic feedback and simply explanations, thus freeing up human resources to pursue higher added value activities (Pedro, Subosa, Rivas, & Valverde, 2019). In other words, one of the positive externalities is that it can replace humans for basic customer service activities. This is particularly important in a time of severe teachers' shortage in the United States and of rising education costs in the developed world (Feigenblatt, 2023). Many teachers complain that they spend much of their time involved in activities unrelated to teaching, the integration of artificial technology into the education industry can reduce that burden, which will in turn lower turnover and increase job satisfaction. The same is true of educational administrators. Artificial intelligence can help provide support in issues of student services and free up time for educational leaders to focus on strategic thinking and project development.

From the perspective of students, artificial intelligence can provide a wide range of extra support in terms of basic tutoring and customer service. Moreover, artificial intelligence has the advantage that support and service can be available 24 hours a day 7 days a week. Another important positive externality is that the introduction of artificial intelligence to education may provide considerable cost savings for institutions that can then be passed on to students. One great example of this possibility would be to integrate artificial intelligence into massive open online courses (MOOCs), which will make the courses more student-centric without increasing the costs. Therefore, artificial intel-

ligence has the potential to improve student outcomes without increasing the strain on teachers and without increasing costs.

Nevertheless, there are also important possible negative externalities of the introduction and spread of artificial intelligence in education. One of those negative externalities is that it raises the bar in terms of the activities and functions expected to be performed by teachers, professors, and administrators. By removing repetitive and simple tasks, artificial intelligence raises the bar in terms of the complexity of the job duties of both faculty and staff. This is something that has happened in previous technological revolutions. Long gone are the days of phone operators in schools and of armies of secretaries making appointments. The number of staff in support positions has decreased dramatically over the past two decades, in particular in developed countries, and this trend will continue in the near future (Eldridge & Cranston, 2009; von Feigenblatt, 2021). The remaining secretaries are basically office managers who handle complex tasks and leverage resources. Thus, most remaining staff members exercise managerial functions. The same trend is true for faculty members who will have to focus on higher functions of teaching rather than on clerical tasks. Even though this can be considered to be a positive externality by many, it will also raise the bar in terms of aptitude and education for the remaining faculty. It is no longer necessary for a teacher to spend hours grading fill in the blank worksheets when this process can be automated and artificial intelligence can even provide basic feedback to the students. The crunch will be felt the most in K-12 because of the historically high load of clerical and repetitive tasks on teachers.

There are also many possible negative externalities for certain groups of students, depending on the level of edu-

cation. One possible effect will be that education will become more polarized at the K-12 levels. This polarization already exists in terms of accelerated programs for high school students and gifted and honors programs for lower and middle school pupils. Nevertheless, public school districts in the United States have attempted to maintain a single track for high school students except in very extreme cases. The overall impact of artificial intelligence on jobs and higher education will have an effect of further separating academic and vocational tracks. One of the reasons for this predicted polarization is that the integration of artificial intelligence into education and jobs in general will make many lower order thinking activities unnecessary. One example that can already be seen is the evolution of training programs for mechanics. Many public high schools in the United States offer vocational programs to train mechanics. The changing technologies have resulted in the same training that students received during their high school years qualifying students for less technical jobs every year. In other words, the training that they received used to qualify them as full mechanics, while now it qualifies them as assistants to full mechanics or in other cases to work changing tires or providing other limited services. The reason for this downgrade in the employment options of students of this type of program is not a decrease in the rigor of the programs, but rather the increased complexity in automobiles, requiring higher-order thinking and longer periods of training. Modern automobiles include complex computer systems, and their maintenance requires understanding the interconnection between the different systems. Thus, the training required to service modern engines fully requires a higher basic aptitude than in previous decades.

A similar process is taking place in other fields, making it harder to directly enter certain professions right out of high school and even right out of college (Praphamontripong, 2010; Rangel, Ivanova, & Singer, 2009). Moreover, the integration of information technology is pushing the entry requirements gradually higher, which makes it difficult if not impossible to accommodate the ideal of progressive education of including different abilities and learning styles in the same classroom. Thus, a negative externality of the integration of artificial intelligence is that certain activities will become redundant because AI can perform them, thus forcing education programs to focus on higher order processes which can still only be performed properly by humans. Nevertheless, those activities require higher intellectual quotients, making differentiation in the same classroom counterproductive and virtually impossible. This is clearly a positive externality for gifted students, who will benefit from this push to the top rather than an emphasis on the lowest common denominator. It will arguably have a minimal effect on special education because it is already sheltered and protected by law. However, it will have a detrimental effect on students who fall near the center of the normal bell curve in terms of IQ. The average student, who is not protected by legislation and policies dealing with students with special needs, will find himself or herself in an academic limbo. Two possible scenarios are equally problematic. One possible scenario will be for the rigor for "regular" courses to increase and to focus on higher-order thinking to scaffold the average student to deal with the changing educational landscape brought about by the integration of artificial intelligence. This could possibly result in high failure rates, which are ideologically unacceptable to many progressive educators. Another possible scenario would be that aver-

age students, in terms of IQ and aptitude, will be forced down into vocational courses, while the upper tier will be channeled to a traditional academic track. This scenario is already happening in many public-school districts.

The negative externalities mentioned in the previous paragraphs in relation to K-12 education also apply to higher education but with a few unique characteristics. Higher education in the United States is not considered to be a universal right and there is an ongoing debate about the high cost and returns on investment of college degrees (Bowen, 2013; Ewest & Klieg, 2012; Mangu-Ward, 2008; Rangel et al., 2009; Scholz, 2013; Thelin, 2011). Thus, there is a clash between traditional and progressive education camps about the funding priorities for higher education. Most higher education institutions in the United States are selective, and standardized tests as well as high school GPAs are used to try to determine the prospects of a student in a higher education environment. Not surprisingly, the most selective institutions show the best results in terms of scholastic achievement. Nevertheless, there are other important factors, such as sociocultural fit and extracurricular activities. At the core of this important debate is the argument over the purpose of a college education and the value that it provides for the student and society as a whole. It is very difficult to justify a curriculum which prepares students to do the same thing that artificial intelligence can do in a more efficient way. In other words, preparing a student to memorize facts and then regurgitate them in a report does not justify thousands of dollars per credit. Thus, professors and administrators in higher education can do something that many of them have wanted to do for a long time, increase the rigor to focus on higher-order thinking, a real "race to the top" rather than a focus on making sure that "no child is left behind".

Nevertheless, in practice, there is a clear problem with the need to increase the rigor and focus on higher-order thinking in higher education. This process will make it very difficult for a large proportion of the student population to graduate, forcing them out of the traditional higher education system. Moreover, because the majority of the student population is average in terms of their position in the IQ bell curve, a narrowing of the eligible pool of students can have a detrimental effect on the higher education sector because it will decrease diversity in the short term, and it will put severe pressure on the financial resources of non-elite institutions.

Another possible negative externality is a concurrent race to the top for faculty members. This is already happening in South America and other parts of the developing world. Universities and other higher education institutions are highly diverse in terms of their mission and vision. A large sector developed over the years to educate a broad cadre of entry-level professionals. Most of those institutions are not selective and focus on teaching basic skills and best practices for applied fields. Due to characteristics of the target population, the emphasis was on recruiting faculty members who focus on teaching and catering to the multiple needs of the students, including the remediation of gaps in their basic skills and knowledge. Nevertheless, the need to increase rigor and to prepare students for jobs which require higher-order thinking rather than the simple memorization of basic facts has resulted in many national governments starting the painful process of increasing entry-level requirements for faculty and changing the evaluation structure for their career path (von Feigenblatt & Gavilondo, 2022). Well-known examples include Ecuador, where full-time faculty were required to pursue research doctorates or risk losing their full-time

contracts. In Colombia, the evaluation of higher education faculty is almost based one hundred percent on scientific research output and conference presentations. The situation is very similar in other developing countries. In Europe, the requirements for promotion of faculty continue to increase, and the main factor is research output and impact while in the United States, rankings also focus on research and similar scholarly activities. From the perspective of current faculty members and prospective ones, this rapid change raises the bar considerably. Many prospective faculty members who want to focus on teaching but who may lack the required training, aptitude, or resources to conduct and disseminate research may find themselves increasingly marginalized in the field of higher education. One obvious reason for this shift of emphasis from teaching to research is that if selectivity increases in terms of the student body, then the need for remediation and support will clearly decrease. If the average student body IQ will increase to over 114 and that due to increased selectivity they will come with a much stronger academic background, then those students will be well-equipped to adapt to the teaching style and requirements of their professors and institutions rather than the other way around. To understand the difference in emphasis, one need only compare a first-year course in an Ivy League University and a first-year course in a community college. Both groups of students may be eager to learn and to take advantage of the learning opportunities provided. Nevertheless, the students in the Ivy League classroom can "hit the ground running" and do not expect any accommodations or remedial assistance from the professor who is not an expert in pedagogy or andragogy but rather a subject-matter expert. In the case of the community college instructor, he or she must spend the first couple of weeks assessing

the level of his or her students and when covering new material, he must make sure that the students understand the basic concepts and cater to their needs.

On the other hand, this may have an unintended positive externality, which is that more highly qualified faculty will choose to teach at the high school level. One of the main problems with high school teachers is that many of them are weak in terms of content knowledge (Feigenblatt, 2023). However, the previously described pressure on higher education will push down certain teaching-centered faculty to high school, which will have a positive effect on the quality of accelerated courses at the high school level. This phenomenon is already underway, as most teachers for advanced placement, international baccalaureate, and honors courses tend to have master's degrees or doctorates in content fields. Even though there are many reasons for advanced degree holders to choose to teach at the K-12 level rather than in higher education, one of the main ones is that they prefer to focus on teaching rather than research. Thus, there is a process of self-selection. Nevertheless, there are many unhappy undergraduate instructors and even graduate professors, who prefer teaching rather than research but choose to teach at the higher education level because of a lower workload and higher pay. This possible exodus will undoubtedly improve the teaching of content intensive courses at the K-12 level, but may result in a sharp increase in rigor at the undergraduate level and a move towards a more teacher-centered classroom. This changes many further exacerbate about many average students in higher education who may have grown accustomed to a student-centered classroom at the K-12 level with virtually no possibility of failure, who then find themselves in a sink-or-swim environment at the college level.

Tentative Conclusions

The first tentative conclusion is that the spread of artificial intelligence will have a transformative effect on the labor market. Due to the intricate connection between the labor market and education, primary, secondary, and higher education will be impacted by the changes brought about by artificial intelligence. The relationship is bidirectional, and changes in education will also impact the labor market. Taking into consideration the current capabilities and limitations of artificial intelligence, the main brunt of the impact will hit the 70 percent at the center of the normal curve of intelligence quotients. In other words, the most important possible changes and disruptions will affect the population with IQs falling between 85 and 115. This comprises approximately 70 percent of the adult population.

As mentioned in previous sections of this chapter, contemporary applications of artificial intelligence can perform tasks usually linked to IQs of 85 to 115. People with IQs lower than 85 tend to be protected by legislation dealing with disabilities, and those with IQs between 75 and 85 tend to be employed in lower end service jobs or in physical labor. On the other hand, people with IQs above 115 can perform tasks beyond the boundaries of what is possible for artificial intelligence, and thus the direct impact on them will be minor in comparison to the bulk of the population.

Even though intelligence quotients are just one factor that should be considered when discussing the possible impact of artificial intelligence in education, there is a strong correlation between intelligence quotients and admissions into selective programs in higher education (L. Chen et al., 2020). Moreover, there are certain jobs which require high intelligence quotients and prolonged periods

of formal education. Thus, even though IQ is just one variable, it is useful for the present discussion.

In summary, the mainstreaming of artificial intelligence will result in the further polarization of education at all levels. The gap between students in gifted programs and the general student population will widen. Higher education will also see polarization of both the professorial and of the student population. It is also likely that gifted programs will become the new standard in terms of design for undergraduate and graduate programs. Inductive education and higher-order thinking will be integrated into curriculum planning to attempt to scaffold the general population.

Therefore, the advent and mainstreaming of artificial intelligence is yet another technological disruption which challenges humanity to transcend its limits through innovation and creativity. Moreover, rather than a complete transformation, education may simply be returning to an arguably more efficient model in which resources are channeled in well-defined tracks according to the student's aptitude and society's needs.

References

Bowen, W. G. (2013). *Higher Education in the Digital Age*. New York: Princeton University Press.

Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *Ieee Access*, *8*, 75264-75278.

Chen, X., Xie, H., Zou, D., & Hwang, G.-J. (2020). Application and theory gaps during the rise of artificial intelligence in education. *Computers and Education: Artificial Intelligence*, *1*, 100002.

Eldridge, K., & Cranston, N. (2009). Managing transnational education: does national culture really matter? *Journal of Higher Education Policy & Management, 31*(1), 67-79.

Ewest, T., & Klieg, J. (2012). The Case for Change in Business Education: How Liberal Arts Principles and Practices Can Foster Needed Change. *Journal of Higher Education & Practice, 12*(3), 75-86. Retrieved from http://search.ebscohost.com.ezproxylocal.library.nova.edu/login.aspx?direct=true&db=eue&AN=79201102&site=ehost-live

Gao, X., Zhang, S., Zhang, Y., & Chen, F. (2017). Evidence of Hominin Use and Maintenance of Fire at Zhoukoudian. *Current Anthropology, 58*(16), S000-S000.

Lujan, L. L., Nadal, L. F., Fash, B. W., Fash, W. L., & Hernandez, P. (2006). The Destruction of Images in Teotihuacan: Anthropomorphic Sculpture, Elite Cults, and the End of Civilization. *RES: Anthropology and Aesthetics, Spring -Autumn* (49/50), 12-39.

Macdonald, S. (2007). British Social Anthropology. In P. Atkinson, A. Coffey, S. Delamont, J. Lofland, & L. Lofland (Eds.), *Handbook of Ethnography* (Paperback ed., pp. 60-79). London: Sage Publications.

Mangu-Ward, K. (2008). Education for Profit. *Reason, 40*(3), 38-45.

Pedro, F., Subosa, M., Rivas, A., & Valverde, P. (2019). Artificial intelligence in education: Challenges and opportunities for sustainable development.

Praphamontripong, P. (2010). Public Policy and the Growth of Private Higher Education in Thailand. *ASHE Higher Education Report, 36*(3), 77-90.

Rangel, E., Ivanova, A., & Singer, B. (2009). Higher education, employment and globalization: The cases of Mexico and Thailand. *Pacific-Asian Education Journal*, 75-90.

Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. *International Journal of Artificial Intelligence in Education, 26*, 582-599.

Scholz, C. W. (2013). MOOCs and the Liberal Arts College. *Journal of Online Learning & Teaching, 9*(9), 249-260. Retrieved from http://search.ebscohost.com.ezproxylocal.library.nova.edu/login.aspx?direct=true&db=eue&AN=90241780&site=ehost-live

Thelin, J. R. (2011). *A History of American Higher Education* (2nd ed.). Baltimore: The John Hopkins University Press.

von Feigenblatt, O. F. (2021). Mediation for Management: Dealing with Conflict in the Workplace. *InnOvaciOnes de NegOciOs, 18*(35), 113-119.

von Feigenblatt, O. F. (2023). The Perfect Storm: Structural and Contextual Factors Exacerbating the Teacher Shortage in Florida. *Hallazgos, 20*(39).

von Feigenblatt, O. F., & Gavilondo, C. (2022). Retos de la profesionalización de la educación superior en Ecuador: lecciones extrapoladas de la experiencia japonesa. *Observatorio Iberoamericano de la Economía y la Sociedad del Japón., 13*(37), 6-15. Retrieved from https://www.eumed.net/uploads/articulos/0b6eb3cd3872a1f20fd1f1950825fd35.pdf

Index

Prologue 9

Chapter 1. Exploring the Impact of Artificial Intelligence on Education from a Social and Anthropological Perspective 11
Introduction 12
1. An Anthropological Perspective 13
2. Possible Negative and Positive Externalities 14
Tentative Conclusions 23
References 24

Chapter 2. The use of ChatGPT as artificial intelligence in language teaching 27
Introduction 28
1. Main current debates around ChatGPT 32
2. Didactic implications for language teaching 37
Final considerations 40
References 42

Chapter 3. The impact of AI in education: 120+ teaching tools and resources for classroom work 47
Introduction 48
1. AI in the spotlight 49
2. But... what is this ChatGPT? 50
3. Teaching tools and resources 51

4. The key is in the question! 60
5. By way of conclusion and one last recommendation... . . 64
References and documentation sources 67

Chapter 4. Artificial Intelligence and education: why, how and what for 69
Introduction 70
1. From data to reflective practice 72
2. Some ideas on the location and use of artificial intelligence tools in the teaching and learning processes 78
Conclusions and a concern 86
References 89

Chapter 5. *Homo technicus*: From *techné* to Artificial Intelligence 97
Introduction 98
1. *Techné* as a creative tool 99
2. The technology revolution 102
3. The emergence of Artificial Intelligence 104
4. Considerations about today's *Homo Technicus* 108
Conclusions 112
References 113

Chapter 6. The Role of AI in Teaching Philosophy 121
1. Introduction 121
2. Enhancing Instructional Methods 123
2.1. Automated Feedback 124
2.2. Personalized Learning Paths 125
2.3. Interactive Virtual Discussions 126
3. Expanding Access to Philosophy Education 127
3.1. Online Philosophy Courses 128
3.2. Language Translation and Accessibility 129
3.3. Customized Learning Experiences 130

4. Ethical Considerations in AI-Driven Philosophy Education 131
4.1. Ensuring Ethical AI Decision-Making 132
4.2. Addressing Bias in AI Algorithms 133
4.3. Promoting Critical Thinking and Human Involvement 135
5. AI as a Tool for Philosophical Inquiry 136
5.1. Data Analysis for Philosophical Research 137
5.2. AI-Generated Philosophical Arguments 138
5.3. AI and the Exploration of Ethical Dilemmas 139
6. Challenges and Limitations of AI in Teaching Philosophy 140
6.1. Loss of Human Connection and Intuition 140
6.2. Limitations of AI in Understanding Abstract Concepts 141
6.3. Balancing AI and Human Instructional Roles 143
Conclusion 144
References 145

www.octaedro.com

The present volume explores the broad impact of artificial intelligence in education by presenting a broad range of perspectives from some leading experts in the field. An initial chapter tackles macro level considerations from a social and anthropological perspective. Further, chapters explore more specific topics, ranging from philosophical aspects to the implications of AI in pedagogy and andragogy. The final chapter attempts to integrate the disparate aspects of the dialogue into a cohesive voice.

His Excellency Ambassador Otto Federico von Feigenblatt holds a bachelor's degree in social sciences from Ritsumeikan University of Asia Pacific (Beppu, Japan), a Master's degree in International Development from Chulalongkorn University (Bangkok, Thailand), a Doctor of Philosophy in Conflict Analysis and Resolution from Nova Southeastern University, a Doctor of Education in Leadership in Education from Nova Southeastern University, and two postgraduate degrees in Social Justice and International Relations and a Master's degree in anthropology and archaeology from Harvard University (Boston, Massachusetts). Ambassador von Feigenblatt has completed a postdoctoral fellowship at the University of San José, Costa Rica with a focus on management and leadership. Ambassador. Otto Federico von Feigenblatt is a corresponding academician of the prestigious Royal Academy of Economic and Financial Sciences of Spain, academician of honor of the Royal Academy of Doctors of Spain, and numbered academician of the National Academy of History and Geography of Mexico. His Majesty King Phillip VI of Spain knighted him with the Order of Isabella the Catholic for his contributions to the social sciences. He currently serves as Dean of Global Relations - Latin Division, Keiser University (Fort Lauderdale, Florida). Since July 2023 Dr. Otto Federico von Feigenblatt serves as ambassador and deputy permanent observer of the International Youth Organization for Iberoamerica to the United Nations. Moreover, the Secretary General of the Andean Parliament appointed him adviser for education.

Dr. Oscar Yecid Aparicio Gómez. Doctor in Education (2015) and Doctor in Philosophy, Ethics and Politics (2006) from the University of Barcelona, with an Outstanding qualification and Cum Laude mention. He is a professor, researcher and editor-in-chief of scientific journals in universities and organizations in the productive sector for the last 15 years. Currently, he is Director of Ed & ICT Research Center.

ISBN 978-84-10282-04-9
9 788410 282049

Octaedro Editorial