

Educational Concepts and Methodologies in the AI Era: Challenges and Responses

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Abstract The emergence of general artificial intelligence (AI) model technology, notably ChatGPT, has substantially transformed contemporary approaches to knowledge exploration and acquisition, presenting significant challenges to educational concepts and methodologies. This article initially delineates the myriad obstacles encountered in learning during the AI era and meticulously scrutinizes the attributes and limitations of conventional educational concepts and instructional approaches, which are prevalent in examination-oriented education in primary and secondary schools. Commencing with the requisites of “human beings” and transition “to adulthood,” it delves into the educational objectives of fostering individuals and advocates for the fundamental integration of education within the realm of philosophy. Subsequently, by elucidating the correlation between “fish” and “fishing” in conjunction with the concept of the History and Philosophy of Science (HPS), it furnishes numerous illustrations of incorporating the thoughts and methodologies of scientists in the exploration and resolution of problems within the classroom. The article underscores the profundity of insight of educators compared to adult cogitation and the perceptual limitations of adolescent students, underscoring the imperative for educators to concentrate on guiding students in their pedagogy.

Keywords AI era, educational concept, educational objective, examination-oriented education, History and Philosophy of Science (HPS) concept

1 Introduction

The rapid advancement of general AI model technology has propelled humanity into a new era, wherein generative AI technology permeates crucial factors of society, fundamentally reshaping social development. This ushering era of AI brings forth comprehensive and unprecedented challenges. Notably, the concepts and methodologies of education stand as pivotal concerns in this context.

Since the second half of 20th century, the exponential growth of knowledge has been evident, leading to increasingly prominent issues in learning and education. This growth poses a significant challenge as individuals are unable to keep pace with the escalating knowledge throughout their lifetimes. Consequently, the pace of human learning considerably lags behind the rate of knowledge expansion. Addressing this pressing conundrum has emerged as a perplexing issue in the “knowledge era.”

In contemporary times, the process of knowledge discovery and expansion has undergone profound transformations, attributed to the emergence of the Big Data research paradigm, which has instigated a digital revolution. Essentially, humanity’s comprehension of the world is predominantly expressed through a mathematical representation of empirical phenomena. As quantitative research proliferates, knowledge is chiefly articulated in the form of specific symbols or logical mathematical expressions. Notably, the application of mathematical means by Newton in addressing issues in natural philosophy led to the evolution of physics from natural philosophy, catalyzing groundbreaking advancements in modern science. The mathematization of modern natural

philosophy has evolved into a pervasive trend, permeating various domains and serving as a yardstick for the maturity and comprehensiveness of scientific discipline (Liu, 2005). Consequently, mathematization has become a crucial avenue for humans' comprehension of the objective world, corroborating Pythagoras' assertion that "all things are numbers." In the contemporary context, the significant event in the process of mathematization is the conversion of digitized information into a format suitable for mathematical analysis and processing through computer technology. This digitization enables the representation of all information using binary codes "0" and "1," facilitating the storage, transmission, and manipulation of data. With the increasing digitization of objects and information, such as the scanning and digitization of books, formerly unattainable solutions become feasible in the digital realm (Negroponte, 1996). Consequently, Wheeler's theory of "It from bit" has materialized, signifying a shift from digitization to datafication.

The term "Data" originally pertains to the specific, objective entities acquired through scientific experiments, observations, and survey research to represent phenomena and substantiate evidence. Through the Data analysis, individuals acquire knowledge about various phenomena. The evolution of data can be categorized into two stages: small data and Big Data. Small data primarily involves obtaining information about the behavior of entities through random sampling statistics. Its methodological approach aims to maximize information with minimal data, but it suffers from inherent limitations, such as its accuracy being contingent on sample selection and its inadequacy for detailed scrutiny. Conversely, Big Data, distinguished by large-scale, diversity, and speed, offers substantial help in comprehending various phenomena. For instance, Big Data can encompass an entire domain and provide comprehensive insights, enabling individuals to surmount human biases and frameworks, among other benefits. The widespread application and success of Big Data across scientific, economic, and societal domains have elevated it to a socio-technical phenomenon. It not only facilitates the unprecedented collection, analysis, and processing of data but also instigates profound shifts at the epistemological level. This novel way of understanding represents the "fourth paradigm" of scientific research, succeeding the empirical, theoretical, and computational paradigms. It involves the generation or collection of data

through simulation and the utilization of software for data processing, subsequently storing the acquired information and knowledge in a computer. The verification and review of data by data researchers commence in the later stages of the overall workflow (Hey et al., 2009).

The evolution of scientific discovery patterns and the robust development of Big Data technology have intensified the challenges of learning. Concurrently, significant shifts have transpired in people's reading and learning habits.

The rapid proliferation of learning content and unsupervised learning has yielded adverse effects, necessitating the educational domain to grapple with the issue of fragmented reading engendered by online learning. Traditional learning practices predominantly relied on paper-based media, with paper-making and printing technologies playing pivotal roles in disseminating human knowledge. The advent of television technology ushered in a new epoch of screen-based learning. Subsequently, the emergence of new media such as the internet, multimedia, and mobile phones, along with their associated software technologies, have revolutionized learning approaches, catering to personalized demands instantaneously. However, these transformations also engender negative consequences, including fragmented reading and learning (He & Liu, 2018). The "network native" generation of young students, raised in an environment dominated by digitization and instant mobile reading, has adopted fragmented reading habits. This habituation has led to adverse implications for school learning, fueling superficial assimilation of content, fostering shallow cognitive patterns, and inducing cognitive overload due to information inundation. These superficial reading habits are at odds with the profound comprehension and systematic knowledge acquisition demanded by traditional education, impeding students' in-depth exploration of problems and augmenting the challenges of enhancing the efficacy of traditional education. With the aid of AI, a student can effortlessly craft a composition on the theme of "Autumn Outing," evoking a distant ambience and eloquent prose. Nevertheless, this proficiency may be underpinned by a tendency to take shortcuts in planning and conceptualizing the text, undermining the cultivation of rigorous and deliberate effort. Consequently, significant enhancement in thinking prowess becomes arduous for students, as cognitive capacity can solely be bolstered through continuous

training. The constraints of expedited learning approaches are evidently discernible.

The advent of general AI model technology has significantly impacted traditional educational concepts and methodologies. Notably, ChatGPT, as an exemplary chatbot, possesses the capacity to generate poetry, translate foreign languages, and crucially, engage in human-machine dialogues and interactive exchanges. When users pose inquiries, the chatbot offers real-time, fitting responses, and can proficiently craft articles based on user's request. Its responses have reached the proficiency level of average college-educated individuals. These advancements have spurred concerns about the potential replacement of humans by AI in the future, profoundly influencing society. In the realm of education, this engenders a topic about the potential replacement of teachers by ChatGPT-like entities. Consequently, there is a critical need to thoroughly reconsider the objectives of education, the role and standing of educators, student learning tasks and methodologies, and the integration of AI within the educational landscape.

In conclusion, the evolving technological landscape has engendered novel challenges in education. It is imperative for experts, scholars, teachers, and students to earnestly contemplate this paradigm shift. The ensuing discussion amalgamates strategies for education to adapt to the transformative changes in the AI era and presents reflective insights.

2 Reevaluating the Educational Objectives in the AI Era

In the global context, modern school education predominantly adopts a disciplinary teaching format, where classroom content primarily entails the transmission of accumulated knowledge from human history. This knowledge serves as a crucial catalyst for societal development, symbolizing the level of human civilization and facilitating inter-generational cultural inheritance. To assess learning effectiveness, various knowledge assessment methods, such as examination content, methodologies, and systems, have been instituted.

The transformation in the knowledge supply model precipitated by AI-generated content (AIGC) has resulted in a reorientation of the original educational intent, even leading to a loss of direction. Present-day educational endeavors have become increasingly challenging, characterized by the confinement of school education to the dissemination of existing knowledge might and the evaluation of learning out-

comes. Schools place significant emphasis on students' exam scores, with individuals regarding these scores as pivotal determinants of their future educational and employment pathways, as well as their lifelong prosperity, aspirations, and value attainment. However, upon graduating from school, the practical application of acquired knowledge amounts to less than 10%. This prompts reflection on the value of dedicating the formative years to acquiring knowledge with minimal future utility. Two considerations are given. Firstly, the unpredictability of future knowledge and skill requisites necessitates comprehensive learning to prepare for forthcoming needs. Secondly, although acquired knowledge and skills may not find direct application in the future, they contribute to shaping individual qualities and unique thought processes, underpinning a person's cognitive capacity and adaptability to the social environment. Therefore, the prevailing education model is the culmination of enduring selection and adaptation by society, exhibiting its inherent rationale. Nevertheless, protracted, aimless, and inefficient educational and learning methods often evoke feelings of tedium and laboriousness, signifying a detachment of education from human nature. To mitigate this predicament, the education sector has persistently embarked on explorations regarding educational objectives, methodologies, and content. Over the past few decades in China, endeavors encompassing quality education exploration, inquiry-based learning, and the delineation of core curriculum literacy have been arduous pursuits. The pertinent question arises: Where lies the path forward? This article posits that it is imperative to first elucidate educational objectives, standardize educational methods based on these objectives, and subsequently determine the educational content, and so forth.

The "small goals" of education must fundamentally align with the "big goals" of human life and social advancement. Individuals, from the moment of birth, are principally confronted with basic survival imperatives, necessitating clarity of purpose: firstly, to fulfill the fundamental requirement of adapting to the external environment, encompassing the acquisition, exploration, and adept assimilation of copious knowledge and principles about the world; secondly, to strive for an enhanced quality of life, the cultivation of a rich spiritual existence, and the development of refined interests or vibrant, joyful, and humorous attributes, among others. Whether viewed through the lens

of human history or the diverse life stages experienced by individuals, each era encompasses distinct learning content, thereby formulating varied “teaching outlines” and “textbooks” across different historical phases, regions, and national contexts. School education, constrained by time and space limitations, cannot comprehensively impart all knowledge and skills to students; choices must be made based on genuine exigencies. The crux of many prevailing challenges lies in the deficiency of proper delineation between essential knowledge and pivotal skills. From the standpoint of the philosophical “theory of major and minor points” and the “theory of key points,” the failure to timely re-calibrate educational objectives in accordance with evolving times and circumstances has rendered aforementioned principles such as teaching students in accordance with their aptitude as hollow. The deviation or even estrangement of educational objectives is precisely the root of the extant educational issues. The essence of education does not hinge on the technical facets of schools, the caliber of educators, or the competencies of students, but rather on the orientation of education. The primary objectives pursued by primary and secondary education in China, from schools to teachers, particularly students, used to predominantly center on enhancing exam scores. Consequently, teaching content is subordinated to the goals of various examinations. Only through excellence in major exams, such as the college entrance exam, can a child’s future shine brightly, a sentiment acclaimed by the entire society regarding schools and educators. Despite excelling academically, children can receive greater praise due to their exceptional performance in the realms of arts and sports. Individuals groomed within this evaluative framework, even if admitted to prestigious domestic and international universities, achieve commendable academic achievements, and accrue substantial professional accomplishments and wealth, are they truly successful in life? The response is unequivocally negative. The objective of education should be to facilitate the development of well-adjusted, content, self-reliant, confident individuals who contribute to the welfare of others and social advancement, embodying traits such as intelligence, benevolence, and passion. They must not only possess the capacity to confront the future development but also endeavor to nurture a noble and engaging spirit. Consequently, the educational objective should focus on nurturing and shaping a comprehensive aptitude and an exemplary personal that individuals require throughout their life. The “small goals” of education

must correspondingly serve the “big goals” of human life and social development. Providing education for children is not the ultimate goal but rather a means to nurture them. School education represents merely a principal undertaking within a life stage, with the goal of lifelong learning not being deliberated here.

3 Reflecting on Educational Methodologies in the AI Era

The scrutiny and exploration of educational methods in China have traversed a protracted and intricate trajectory. Commencing from “quality education” to “inquiry learning,” and presently transforming into the examination of “core literacy” across various subjects in the contemporary “new curriculum standard,” several foundational concepts remain challenging. The issue of excessive academic burden on primary and secondary school students has long been a societal consensus. In response, China has instituted the policy of “Ease the Burden of Excessive Homework and Off-Campns Tutoring for Student Undergory Compulsory Education” to address the predominant issues in compulsory education, such as the onerous load of student homework and extracurricular training, as well as the excessive financial and psychological pressure on parents. Nevertheless, an ensuing quandary for students is how should they utilize their free time. This predicament is intricately linked to China’s enduring educational tradition and methodologies.

In China, the ancient saying “Give a man a fish and you feed him for a day, teach a man to fish and you feed him for a lifetime” has been extant for centuries. However, the methodology for teaching students the art of “fishing” has remained elusive, with the proclivity for mechanically imparting preexisting knowledge persisting. Firstly, China upholds a longstanding tradition of early childhood education emphasizing the memorization of classics during a child’s formative years, with the aspiration that the child will grasp the recited content in later years. Secondly, a strong belief in the ancient saying “Read a book a hundred times and the meaning will be self-evident” prevails, instilling the notion that without understanding and reflective engagement, children will intuitively comprehend the knowledge in the future. A familiar instances is the multiplication table, which dates back over 2,000 years to the Qin Dynasty as evidenced by the uncovered Qin bamboo slips from Liye, Hunan Province. For example, Chinese ancient poems, English vocabulary, and

even the study of mathematics, physics, and chemistry predominantly involve the memorization of formulas and mathematical calculations. In the study of the Pythagorean theorem, students are expected not only to memorize $3^2+4^2 = 5^2$ but also to memorize $6^2+8^2 = 10^2$ and additional arrays of numbers with similar relationships, fostering the hope that these sets of numbers will emerge in future exams, facilitating direct and accurate responses without the need for mathematical calculations and reasoning. Similarly, in the study of the universal law of gravitation $F = G/(Mm/r^2)$ in high school physics, students are typically expected to comprehend the symbolism in the formula, perform calculations, and solve problems based on specific conditions and values in the future, with minimal emphasis on fostering further inquiry and discovery of new problems. Scientific development, as Popper (1987) has elucidated, entails a cyclical process of identifying problems, proposing suitable hypothetical theories, iteratively eliminating errors, and subsequently introducing new problems. Behind formulas such as the universal law of gravitation there are still numerous unresolved mysteries in the scientific understanding of that era. In addition to the widely acknowledged problem of absolute space and time, there existed challenges related to the speed and medium through which gravity propagates, including issues concerning action at a distance and the concept of ether. These challenges have held significant importance for the subsequent advancements in the field of physics. Nevertheless, these topics are seldom highlighted by educators and in educational materials. Consequently, the cultivation of innovative ability among students has emerged as an urgent matter for the educational community and society at large.

The collective deficiency in innovation among individuals might be linked to personal attributes, opportunities, and diverse factors. However, the widespread lack of innovation is intertwined with the existing educational framework. This unfavorable circumstance is significantly determined by educational concepts and practices. Despite the persistent exhortation to “teach a man to fish,” the true essence of “fishing” remains ambiguous, rendering implementation challenging. Educators should prioritize knowledge dissemination, with students placing greater emphasis on rote memorization instead of delving into the core of problems and engaging in profound contemplation. The myopic and utilitarian challenges in learning and examination have

not been fundamentally addressed, necessitating sustained efforts to navigate through this predicament. Against the backdrop of swift advancements in intelligent technology, particularly since the advent of ChatGPT technology, the challenges confronting the traditional educational paradigm have intensified. Numerous education experts have recognized the imminent crisis and have advocated for educational reform, identifying pivotal areas necessitating change (Zhang, 2023).

In conclusion, it is crucial to harness increasingly sophisticated educational technology to rectify deficiencies and enhance the standard of education.

4 Opportunities and Challenges of Educational Reform in the AI Era

In the AI era, novel developmental issues and heightened educational demands necessitate the attainment of the following objectives.

Firstly, embracing the intrinsic objective of education, which transcends mere knowledge dissemination, and emphasizes the cultivation of students' comprehensive aptitudes, particularly their innovative capacities. Expanding on the relatively narrow domain of science education, contemporary recognition underscores the imperative for science education to foster students' holistic ability to apply scientific knowledge for real-world problem-solving and navigate complex challenges in the “world of life.” Therefore, numerous countries and scholars globally advocate for the incorporation of History and Philosophy of Science (HPS) into the framework of comprehensive science education. Interdisciplinary pedagogical approaches facilitate students' comprehension of the essence of science, the mastery of scientific methodologies, and an understanding of the intricate interplay between science, technology, and society, among others (Fan & Wei, 2023). The integration of HPS into specific scientific curricula remains an ongoing endeavor for educators in the field of science education. For instance, educators may confront challenges such as adhering to the structured teaching outline and the constraints of completing prescribed teaching tasks within stipulated class hours, particularly under the influence of prevailing teaching concepts and methodologies. Educators may prioritize additional practice to hone students' skills, perceiving a dearth of time to delve into content beyond the prescribed syllabus.

The “cramming education” represents a labor-intensive and inefficient mode of learning. Allowing students to step away from rote problem-solving activities and showcasing the process of uncovering pertinent knowledge and the intellectual acumen of scientists in the classroom will not only kindle students’ fascination with problem-solving but also facilitate their comprehension of the essence of scientific discoveries and elevate their cognitive abilities. Each scientist employs a distinct thought process when devising inventions, and where possible, these nuances should be imparted to students within their grasp, enabling them to engross in profound dialogues with the greatest minds in human history and motivating them to enhance their cognitive capabilities. It is through the exchange of ideas with experts that one’s proficiency will be boosted.

For instance, in his exploration of the “law of inertia,” Galileo initially employed a logical and systematic approach to experimentation and reasoning, progressing from “simple to complex,” “specific to general,” and subsequently from “particular to universal.” It is apparent that his rigorous thinking encompassed several praiseworthy aspects, which could serve as significant inspiration for students in their approach to thinking methods. Furthermore, in his investigation of the law of falling bodies, he faced the challenge posed by the rapid descent of objects, complicating the mathematical measurement. He astutely utilized the inclined plane method to mitigate the velocity of the object’s motion, thereby surmounting this challenge. However, the most crucial issue lay in equating the free fall motion of an object with the motion on an inclined plane. The innovative highlight resided in precisely establishing the logical connection between the two. These straightforward examples do not necessitate an advanced level of knowledge from the students, thereby obviating the need for the teacher to dedicate substantial time to the process of presentation and guidance. The key lies in posing appropriate questions during the guidance process, highlighting the challenges of the problems, and subsequently allowing the students to endeavor to analyze and resolve them. Students may find themselves at a loss when confronted with challenges in their academic performance. In such situations, teachers can employ a heuristic approach to guide the students toward a moment of clarity and enlightenment. This approach can help students realize that scientific discovery is not always difficult or elusive, but rather often akin to a thin sheet of paper that can be easily pierced. The disparity between ordinary

individuals and prodigious scientists lies in their modes and capacities of problem-solving and critical thinking. For the majority, the lack of innovative knowledge is not the primary obstacle; rather, it is the dearth of creative inspiration. Reflecting upon these deficiencies allows individuals to clarify their aspirations and engender genuine and sustained progress in the future. And that is the importance of learning from scientists and their problem-solving process.

In classroom settings, the role of a teacher should not revolve around racing against time to rapidly cover more content in a “cramming” fashion. In many regions and schools, both at the middle and high school levels, the standard practice entails compressing the content of three years of courses into two years, followed by a year dedicated to consolidating and reviewing the acquired knowledge, primarily through practice problems. This approach is geared toward optimizing test scores rather than fostering new knowledge acquisition or enhancing students’ understanding of the subject. Devoting an entire year to reviewing previously learned material represents a squandering of valuable student time and deviates from the core educational objective. Nonetheless, this practice has proliferated widely and presents challenges in reversing it due to its efficacy in test preparation.

Moreover, when it comes to reviewing knowledge, reference materials are typically indispensable. These reference materials often offer concise and clear summaries of textbook content, sometimes encapsulating only key points and formulas. Presenting these key points or formulas in class would not take up the entire class time. An exemplary teacher’s pivotal function is to expound upon the knowledge in a comprehensive manner and aid students in internalizing it through vibrant examples. Each teacher, drawing on their profound subject matter insights and accumulated teaching experience, will have their distinct perspectives and will employ flexible teaching methods tailored to individual students to achieve desired outcomes. However, to carry out this task effectively, teachers must have a well-defined understanding of their role.

Teachers may encounter physical limitations as they age, rendering that it is challenging to outperform students in test scenarios within the specified time frame. Nevertheless, as adults, notwithstanding relatively slower reaction times, teachers possess a deeper reservoir of knowledge and comprehension, affording them an advantage in guiding problem-solving paths. As educators engage in educational endeavors, the key lies in harnessing the strengths of adult

cognition and striving to serve as a “mentor” capable of transforming students’ learning experience, thereby mitigating blind learning habits.

The essence of a teacher’s role lies in nurturing and cultivating individuals, where “teaching” is synonymous with “cultivating,” with the pivotal issue being an understanding of human nature, specifically “how to become an adult.” In practice, China has historically underscored the comprehensive development of students’ physical and mental well-being, endeavoring to strike a harmonious balance between morality, intelligence, physical fitness, aesthetics, and labor. In addition to acquiring scientific and cultural knowledge, the objective is also to inspire students to engage in social practices and visit diverse museums and exhibition centers, thereby engendering the rise of museum education. This educational approach, its methodologies, and its value have garnered widespread recognition from schools, teachers, and students, yielding substantial tangible results (Wang & Ding, 2023). However, this approach continues to view students as “receptacles” for accumulating diverse knowledge and skills, implying that the more they assimilate, the more successful their education will be. It is under the influence of this approach that students often find themselves ensnared in a passive and interminable state of indoctrination. Many individuals develop an aversion to learning, and some students even grapple with mental health problems. Education should adapt and foster the development of students, but this maxim is significantly misaligned with the educational objective. Effecting a fundamental change in this approach necessitates a shift in the understanding of human beings.

The emergence of large-scale general AI models, such as ChatGPT, has sparked apprehensions regarding the future of human (Wang et al., 2023), ultimately transcending human capabilities and leading to unforeseeable calamities. Lake and Banoni (2023) unveiled a neural network endowed with human-like systematic generalization abilities. Systematic generalization denotes the capacity to systematically integrate new and existing concepts; for instance, once a child learns “to jump,” they can swiftly comprehend and acquire “to jump backward” or “to jump over obstacles.” This aptitude to integrate new and old concepts is also recognized as “systematic generalization,” with its crux lying in “inferring from one case to another.” In 1988, researchers highlighted that artificial networks,

lacking systematic generalization abilities, could not serve as reliable models of human cognition, sparking fervent debate over the subsequent 35 years. Although neural networks have made significant strides in various domains, such as natural language processing, validating their systematic generalization abilities remains challenging. The recent study engineered a neural network that surpassed ChatGPT in assimilating newly acquired words into the existing lexicon and employing them in fresh contexts, performing on par with human capabilities. This research challenges a classical view that has persisted for 35 years and underscores the remarkable strides made by humans in training network systematic capabilities. Therefore, some individuals have exclaimed that the developed neural network already exhibits human-like performance. The insights gained from advancements in AI research underscore that the crux of human intelligence and cognitive abilities is “systematic generalization,” that is, the capacity to infer from one case to another. Consequently, the focal point of education should also prioritize cultivating this aptitude in students.

The innate curiosity of individuals drives efforts to cultivate students’ capacity for exploration and problem-solving, shaping the fundamental direction of education. For instance, in science education, integrating historical scientific content not only enhances students’ engagement in learning but also exposes them to the progression and philosophical underpinnings of scientific development. This approach fosters a deep understanding of the context in which scientific ideas have evolved over millennia and instills a strong sense of rational thinking that permeates science. Instead of presenting science as a collection of finalized conclusions, it enables a more precise comprehension of the methods of scientific discovery. Hence, teachers equipped with comprehensive knowledge and key insights can effectively manage classroom instruction. Emphasizing the enhancement of students’ theoretical thinking and liberation from exam-oriented education and rote memorization is an imperative task. The specific purpose of curriculum design should be clearly defined, focusing on cultivating deep-level thinking methods rather than the mere demonstration of proofs. For example, in the study of geometry, the emphasis should not be exclusively on the number of theorems students have demonstrated, but instead on fostering the profound thinking methods inherent

in geometry. This approach should lead and motivate students to focus on the abstract definition issues of the concepts involved, the logical reasoning spirit of the proof process, and the characteristics and significance of the axiomatic method. Furthermore, there is a need to orient education toward philosophy, which goes beyond the current approach of memorizing concepts and principles. Philosophy, as the foundation of knowledge, revolves around the perennial question of “why,” and its integration into teaching is crucial for captivating students. Globally, there is a growing emphasis on children’s philosophical education, with successful implementations indicating the universal feasibility of this approach (Qi & Guo, 2023). Genuine philosophy education, distinct from specific subjects, is deeply interwoven with classroom teaching, underscoring its paramount significance in education. Therefore, this reiterates the importance of the HPS teaching concept.

Education represents a multifaceted systematic project. The attainment of educational objectives is influenced by the broader societal culture and its systems, as well as the design of specific assessment methods. Notably, the impact of standardized examinations has sparked considerable debate. Many anomalies in Chinese education can be attributed to the demands and methodologies of examination. While the rationale behind standardized examination is commendable, aiming to enable impartial and equitable assessment of aptitude and efficient automated grading, its implementation is often overly rigid and mechanistic, impeding the adaptability and creativity of both educators and learners.

5 Conclusion

This article critically analyzes the challenges associated with formulating and executing educational objectives in Chinese education and endeavors to propose corresponding strategies and recommendations to address its shortcomings. With the advancement of the current digital age and the widespread adoption of various educational technologies, many concepts in educational practices are more readily implementable. For instance, the pervasive network channels facilitate the implementation of the HPS educational concept, enabling both teachers and students to seamlessly access diverse materials and information, including texts and images. The utilization of generative AI

technology further enhances the potential for personalized learning and tailored teaching methods by providing highly accurate responses. Nevertheless, it is crucial to acknowledge the dual nature of technological advancements. For example, the widespread use of slides contemporary classrooms necessitates standard hardware configurations including computers and projectors. Some educational institutions even mandate the use of slides in teaching. While slides presentations offer numerous conveniences and enrich teaching methods, the resurgence of appreciation for the traditional art of chalkboard writing demonstrates the need for a balanced integration of technologies. Slides offers irreplaceable functions, such as presenting lively audio-visual materials that were previously challenging, while beautiful blackboard writings contribute to a teacher’s unique educational style. These approaches are not mutually exclusive but should be seamlessly integrated. Moreover, the utilization of AIGC in current education has sparked controversy in diverse countries and schools.

Educating individuals represents a protracted and intricate endeavor. In the advanced digital era of educational technology, educators and students have access to a plethora of options in the educational process. Despite the convenience, there is a risk of succumbing to “information bombardment.” It is imperative for teachers and students to uphold independent and lucid thinking, consistently prioritizing the original intention of education and emphasizing human value in the educational context. They must safeguard against the superficial allure and constant evolution of technological means from overshadowing the essence of education, which could potentially engender technological dependence, mental inertia, and unforeseen risks. Discriminating between primary and secondary considerations is not a reordering of priorities; it is a means to liberate from rigid doctrines, navigate the intricate interplay between methodology and technology, and cultivate diverse innovative talents essential for societal advancement, thereby meeting the earnest expectations for education.

Conflict of Interest The author declares that he has no conflict of interest.

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