

An Exploration of the Teaching Path of Artificial Intelligence Technology Incorporated into University Writing Classes

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Keywords: Artificial intelligence technology; university writing class; teaching path

Abstract: Artificial intelligence writing relies on big data, natural language processing, text analysis and other technologies to expand the scope of application in the field of writing, which enables writers to complete writing tasks efficiently. Under the guidance of the new development concept, the construction of digital China needs more talents with artificial intelligence thinking, and university writing teaching needs to keep an open attitude to cultivate students with digital thinking ability. The purpose of this paper is to explore the teaching path of artificial intelligence technology into university writing class, will be through the analysis of the characteristics and advantages of artificial intelligence writing, combined with the teaching objectives, teaching content, teaching assessment of the university writing class, put forward specific teaching strategies and methodological paths for the construction of teaching reform of the university writing course to provide a reference basis.

1. Introduction

In today's digital era, the rapid development of artificial intelligence technology has had a profound impact on the field of education. Writing class, as an important part of university education, is also facing new opportunities and challenges. The emergence of artificial intelligence writing tools provides students with new writing aids, but also triggers a rethinking of writing teaching. From the experience of teaching practice, it is inevitable for students to use AI writing technology, but how to effectively integrate AI writing technology into university writing classes and improve teaching effectiveness has become a pressing issue at present.

As early as 2018, Chen Baosheng, Minister of Education, put forward in a press conference, "In the era of artificial intelligence, if we want to cultivate a new generation of people who are responsible for the rejuvenation of the nation, we are required to reform and innovate the mode of talent cultivation" [1]. In recent years, the enthusiasm of major universities about exploring the teaching of AI writing has been very high, as exemplified by the Fifth Conference on Writing Classes in Colleges and Universities co-hosted by Tsinghua University and Harbin Institute of Technology on 25 May 2024, where colleges and universities gathered to discuss and exchange new modes and methods of writing education under technological change. Among them, Peng Gang, vice president of Tsinghua University, said that Tsinghua University will use artificial intelligence to

assist or deeply intervene in the whole process of teaching, to create artificial intelligence teaching assistants and artificial intelligence teachers, and to promote the in-depth integration of artificial intelligence and education and teaching. Tsinghua University, as a first-class university, has always been at the forefront of the teaching reform of writing classes. Professor Peng Gang's speech also profoundly pointed out that in the context of technological change, university writing courses should actively transform and embrace technology to achieve technology-enabled writing teaching.

2. Features and Advantages of Artificial Intelligence Writing Tools

Artificial intelligence writing is a product of the combination of artificial intelligence technology and writing, which is an emerging hot topic of artificial intelligence in recent years. Artificial intelligence writing, also known as "machine writing" or automated writing [2]. The concept of AI writing is very broad, and can be applied to non-commercial literary writing, application writing and writing for commercial purposes. Currently, common AI writing tools at home and abroad include Copilot, ChatGPT, Bing, Wenxin Yiyin, Google Bard, Claude, Grok, Tongyi Ganwen, Doubao, and Wisdom Spectrum Qingyin, etc. In terms of writing, AI writing tools can be applied to non-commercial literary writing, application writing, and writing for commercial purposes. When it comes to writing, AI writing tools have shown great talent. Through algorithms, these tools can achieve the writing of different genres such as news messages, academic papers, essays, novels and so on. Specifically, the advantages of artificial intelligence writing tools include the following aspects:

2.1 Collecting writing materials

Artificial intelligence writing tools can quickly understand students' writing needs through advanced algorithms and natural language processing technology, and can quickly grab writing materials in the massive network resources. At the same time, the AI writing tool will update the material library in real time to ensure that the material acquired by students is always up-to-date and cutting-edge.

2.2 Provide writing ideas

Most of the students who are intimidated by the writing class are caused by the lack of writing ideas, and the AI tool can provide students with more writing perspectives. According to the study, ChatGPT does have outstanding advantages in the provision of article ideas and thoughts, including providing references to article titles, structural frameworks, endings, and other elements [3].

2.3 Embellishing Language Formatting

Artificial intelligence software plays a significant role in optimising the language formatting. The principle and core of AI is algorithms, which can ensure the certainty and standardisation of the article and mimic the language style in the most concise way [4]. It helps students to revise essay grammar, improve essay structure, calibrate vocabulary accuracy, and adjust style and tone.

The integration of AI writing tools into university writing courses can effectively improve students' writing ability and article quality, and cultivate students' AI technology thinking. Therefore, the integration of AI technology and writing teaching is in line with the requirements of modern society for talents and the call for talents in the age of science and technology. The following will discuss in detail around three aspects of the teaching objectives, teaching content, and teaching assessment of the writing course to further explore the possibility of the integration of AI

technology into university writing.

3. Teaching objectives: the deep integration of artificial intelligence and writing teaching

Teaching objectives have a guiding role for the course and are extremely important in teaching activities. Therefore, the integration of artificial intelligence technology into writing teaching firstly needs to establish new teaching objectives. Generally speaking, teaching objectives usually include knowledge and skills objectives, process and method objectives, emotional attitude and values objectives.

Traditional writing teaching is dominated by knowledge objectives. Specifically, in terms of knowledge objectives, emphasis is placed on programmed writing, including the process of writing, elements, stylistic features and so on. In terms of process and method, it focuses on cultivating students' interest and habit of writing and proficiency in writing strategies and skills. It can be said that the traditional teaching objectives are characterised by knowledge-based, focusing on the achievement of cognitive objectives, i.e. memorisation, understanding and application of knowledge. And with the powerful algorithms of artificial intelligence and the technological changes in the corpus, the knowledge-based, cognitive goal-oriented teaching goal can only cultivate students who are mechanised and write according to templates and routines.

Therefore, the teaching objectives of writing class in the context of artificial intelligence not only focus on the cultivation of traditional writing skills, but also need to be integrated with artificial intelligence technology. In terms of knowledge objectives, it is necessary to master the basic norms, skills and methods of traditional writing, understand the basic concepts of artificial intelligence and master the technical application skills. In terms of ability objectives, the focus is on cultivating creativity, problem-solving ability and critical thinking ability. Teachers should cultivate students' ability to use AI technology to solve practical writing problems, guide students to think critically about AI-generated content, analyse its strengths and weaknesses, and thus improve their writing ability and judgement. In terms of process and method, through theme-based teaching, interesting writing situations, and diversified writing practices, students are skilled in AI writing techniques and methods. In terms of emotional attitude and values, it focuses on cultivating students' awareness of technological ethics and encourages them to create works with cultural heritage and contemporary characteristics through AI technology.

Under the guidance of the new teaching objectives, students are able to have more time to create in-depth thinking and explore the feasibility of the technology together. It can be said that with the support of AI technology, the teaching objectives of the writing class are no longer based on knowledge objectives, but allow students to rediscover the significance of writing, i.e., writing is no longer the learning of some kind of prescriptive knowledge, but a starry sea of rich imagination and creativity.

4. Teaching content: theories and methods of AI writing

Traditional university writing teaching content only involves the writing activity itself, and in terms of teaching content, it pays attention to programmed writing that is easy to train. Today, in the development of cultural digitalisation and industrialised writing, traditional university writing has two outstanding problems in teaching content: firstly, the teaching content is obsolete, the teaching content and materials have not kept up with the development of the times and the needs of the society, many versions of textbooks, the content of the textbooks is similar, and the textbooks of application writing are almost all written in the style of the textbook, and some of the cases are even the cases of the official documents of the 90's of the last century.[5] And there is a lack of attention to the technical phenomenon of current writing, hot topics and emerging forms of writing. Second,

the digital writing environment is neglected. The traditional teaching content makes insufficient use of digital writing tools and platforms, fails to cultivate students' ability to use AI software and word processing, and there are still many students who are not aware of AI tools. Therefore, the content teaching of university writing needs to reasonably add the basic theoretical knowledge of AI writing technology, update the content of the material, pay extensive attention to the frontiers of the discipline, and make students proficient in AI writing tools and mnemonics through diversified teaching methods.

4.1 Introduction of AI writing tools

In recent years, large-scale language models such as OpenAI's GPT series and Google's BERT model have greatly improved the text generation ability of AI writing tools through pre-training on massive text data. The upgrading of language models makes the AI writing tool powerful, which is the basis for it to become a university writing teaching tool.

The content of university writing course teaching mainly includes applied writing and literary writing, although the teaching content of major universities is not the same, but in order to adapt to the actual students, the choice of course content will be more inclined to applied writing, because the adaptive scope of applied writing is more extensive, and is linked to students' graduation and career choice. For example, the Writing and Communication course offered by Tsinghua University and the Critical Thinking and Academic Writing course offered by Shanghai Jiao Tong University place more emphasis on teaching academic and logical applied writing. Since applied writing has a wider scope of adaptation, this paper focuses on AI writing tools related to applied writing.

From the course syllabus as well as the teaching materials of various universities, news, official documents, copywriting, and academic papers appear very frequently. The author will choose the most targeted, professional and suitable AI writing tools for students according to the categories and characteristics of writing genres, as shown in Table 1.

Table 1: List of AI writing tools adapted for university application writing

writing style	writing instrument	application platform	Function
news writing	Xinhua's AI writing	BotSmart	Rapidly collect and collate large amounts of relevant data and generate press releases accurately and quickly.
official writing	Wps AI	Kingsoft Office	Quickly draft official documents; generate PPTs.
copywriting	Ali AI Intelligent Copywriting	Alibaba, PRC e-commerce company	Combine Taobao and Tmall content with natural language algorithms to automatically generate high-quality copy based on products.
Academic paper writing	ChatGLM	ZHIPU AI	General Q&A; multi-round dialogue; virtual dialogue; creative writing; code generation.

4.2 Techniques and methods of AI writing

In the past, the focus of writing teaching was on teaching writing skills, and the introduction of AI writing tools has changed students' perception of writing. It is no longer necessary to spend a lot

of time explaining writing skills and analysing examples in the classroom, but the focus of teaching is shifted to the practice of prompt words and instructions. Through the teaching of writing, students can master the essentials of writing prompt words and be able to complete writing tasks efficiently and with high quality.

Specifically, it is necessary to introduce the basic definition and instructions for using the AI writing tool. Through the teacher's teaching demonstration, students will be familiar with the basic process of using the tool. In the explanation, the focus is on the writing of effective prompt words and passwords, because the AI tool will find the required literature only if effective prompt words or clear passwords are entered. In the process of teaching cue words and passwords, students can further improve their sensitivity to cue words through cue word engineering such as the role method (letting the big model play the role), structured expression (cue word writing with methodology), chain of thought (splitting the complex task into clear commands), Markdown syntax (expressing the large text in a clear way), and BORE analysis method, and then through classroom simulation tools to practice and check for gaps.

If the purpose of classroom exercises is to learn new knowledge, the significance of after-class homework is for consolidation, digestion and assimilation. After-class homework can be assigned to cue word practice, instruction practice and basic article writing training in line with the syllabus. Through post-course consolidation, students can successfully complete the writing process of material selection - technical ideas - organisational structure. At the same time, the assignment should adopt the "student-centred" teaching methodology, which can require students to write guidance notes, journals and mind maps on the operation process of AI tools through the strategy of participatory active learning. This can not only effectively improve students' learning enthusiasm, but also strengthen the proficiency and accuracy of the operation of AI writing tools.

5. Teaching assessment: increasing process assessment and technology regulation

Although the development of technology provides unprecedented convenience for students' writing, it also brings a series of legal and ethical risks, which may involve legal issues such as intellectual property rights, information security, and academic fraud if AI writing supply is abused [6]. Famous schools such as the University of Hong Kong, National University of Singapore, Stanford University, Princeton University, and the University of Tokyo have already issued statements restricting or prohibiting students from using AI tools to write essays [7]. However, in reality, schools cannot stop the advancement of technology, and AI has widely penetrated into the lives of students. Instead of adopting a "one-size-fits-all" ban, the assessment indicators of the courses should be adjusted to prevent students from using them improperly.

From the perspective of the writing class, students use artificial intelligence tools with the following two main purposes: one is used for classroom PPT reporting text materials, artificial intelligence can help students complete the information retrieval and screening, the text of the logical chain and structured generation. The second is for after-class homework practice, AI can identify the purpose of the topic, frame construction and text reference. Based on these two uses, the writing course needs to adjust the assessment method, which can be done by increasing the process assessment and introducing intelligent detection tools in order to deal with the possible pitfalls of AI writing.

Firstly, the course needs to strengthen process assessment by establishing an intelligent writing assessment scheme that includes the process of using technology in writing as part of the assessment. When students submit their work, they need to attach an instruction manual on the use of AI technology, recording in detail how many software are used in their assignments, and explaining which words are refined by AI and which words are formed by their own thinking and

summarising, so as to check the scope of academic intelligent writing and learning attitude.

Second, the introduction of artificial intelligence testing tools. Artificial intelligence detection tools can relatively accurately determine whether students have plagiarism and falsification. Teachers can use professional checking software to determine whether the content of the text is generated by artificial intelligence. Common detection software includes GPTZero, turnitin, NeuralWriter, iwrite, Winston AI, Originality.ai, etc., which can check whether there is a technological creation mark in the text, which helps teachers to more accurately grasp the real writing level and condition of the students, especially to guard against students' use of the artificial intelligence writing tools to cheat.

6. Conclusion

Even though there is some controversy about AI writing, the thinking of "AI+" is becoming a new idea for curriculum reform. In this regard, university writing teachers need to change teaching strategies and methods, pay attention to the efficiency and quality of students' writing, cultivate students' innovative thinking and information literacy, so that students can adapt to the ever-changing information society. At the same time, it is necessary to give full play to the guiding role of teachers in the practice of AI writing, require students to strictly abide by the law in writing, and make clear the boundaries of the reasonable use of AI technology to avoid potential problems. It is also necessary to maintain a good and open mind in the face of future iterations and upgrades of technology, and actively respond to technological change. Only by facing technology and embracing it can we effectively contribute to the construction and development of university writing courses.

Acknowledgement

Funding: Liaoning University of International Business And Economics Gold Class Project, Project name: Writing and Communication (Item No: 2022XJJKGCYB20)

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