

# The Influence and Reasonable Application of ChatGPT to College Students under the Theory of Multiple Intelligences

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**Abstract.** Nowadays, some problems caused by ChatGPT in education have been widely discussed, but the research on ChatGPT under the theory of multiple intelligences lacks a systematic summary. This essay analyzes the advantages and problems of ChatGPT for college students in different aspects under the theory of multiple intelligences. In this essay, it is concluded that ChatGPT's flexibility is suitable for the differences between various intelligences, and there are significant advantages. However, ChatGPT still has a shortage in the practical aspects of multiple intelligences. Based on this, this essay puts forward the following suggestions- Students can use the advantages of ChatGPT's diverse functions and flexibility in developing multiple intelligences and formulate learning plans suitable for individual needs. Teachers can use ChatGPT to help save time, strengthen the learning of professional knowledge, and improve teaching quality. At the same time, in terms of practice, students and teachers should pay more attention to the deviation between virtual and reality, make reasonable use of ChatGPT to assist learning by cultivating critical thinking and discriminating ability, and promote the all-round development of students through developing the advantages and improve the defects.

**Keywords:** Multiple intelligences theory, ChatGPT, influence.

## 1. Introduction

ChatGPT as a language model based on artificial intelligence, helps people solve problems with question-and-answer mode and rich database. It has various functions, such as translation, academic output, AI painting, and dialogue communication. For students, new technologies can help them relieve the pressure of learning, while for educators, it will provide new opportunities for the development of global education, but also bring security and technological risks, as well as adverse effects on employment [1]. According to the research, AI is mainly applied in four key areas: analysis and prediction, evaluation, intelligent tutoring systems, and adaptive systems and personalization. In addition, the academic output under the influence of AI often focuses on technical and methodological issues, while neglecting the pedagogical and ethical aspects of application in an educational context [2].

Some studies in the field of education use the theory of multiple intelligences to develop teaching programs to stimulate the potential of students and promote the development of student's abilities. The emergence of ChatGPT has had a certain impact on the education system of modern society, and the teaching system under the theory of multiple intelligences has undergone some changes. However, there is a lack of research on the relationship between ChatGPT and multiple intelligences. This paper will sort out the relationship between ChatGPT and the development of various intelligences of students, explore the advantages and problems of ChatGPT in the eight intelligences of students under the theory of multiple intelligences, and put forward reasonable suggestions for teachers and students to cope with changes

## 2. Advantages and Feasibility of ChatGPT from the Perspective of Multiple Intelligences Theory

The theory of multiple intelligences was developed by Howard Gardner. He believes that intelligence is the ability that individuals need to solve problems or produce and create effective

products in social or cultural environment, He divides intelligence into eight aspects -Logical-mathematical intelligence, spatial intelligence, intrapersonal intelligence, interpersonal intelligence, naturalist intelligence, musical intelligence, linguistic intelligence, and bodily-kinesthetic intelligence. According to the characteristics of these eight intelligences and previous studies on them, they can be divided into three parts: linguistic and logical intelligence, physical intelligence, and cognitive and communication intelligence [3].

### **2.1. Advantages of ChatGPT in Linguistic and Logical Intelligence**

Language and logic intelligence mainly includes language intelligence, mathematical logic intelligence, and spatial intelligence, which mainly focuses on language learning ability and the ability to analyze, observe, and solve problems, which is mainly reflected in learning [3]. According to research, when ChatGPT is used as a writing tool, it will have a significant positive impact on students' writing ability [4]. Writing is an important skill in language learning, whether in an academic environment or everyday life. The research on ChatGPT for writing shows that the use of ChatGPT as a new technology inspires students' interest in learning and enhances their motivation to learn more. On the other hand, ChatGPT can provide revision suggestions for students' writing and help students improve their writing skills. ChatGPT can generate more accurate teaching methods by summarizing teaching experience, and mobilize students' learning enthusiasm by modifying, improving grammar, and providing more advanced words [5].

ChatGPT helps to improve students' learning efficiency in college computer education as well. In the assisted learning process of ChatGPT, students can be quickly provided with theoretical knowledge, which helps students learn the basic theory of computer courses. Secondly, ChatGPT combines text with pictures, speech, and video, and makes comprehensive use of different senses to enable students to receive it effectively [6].

### **2.2. Advantages of ChatGPT in Physical Intelligence**

Sports intelligence includes musical intelligence and bodily-kinesthetic intelligence, which mainly focuses on people's physical potential and sensitivity to music rhythm, reflected in sports and musical arts and other interests. In physical education at universities, ChatGPT can provide personalized guidance for students, in addition to efficiently answering students' basic questions about course content, technical details, or training methods. On the other hand, Chat GPT can use virtual reality technology to create virtual scenes through virtual practice and simulation, so that students can conduct simulation training [7]. ChatGPT has great potential in physical education teaching in colleges and universities. In the physical training of college students, ChatGPT can collect student data through communication, and formulate scientific and effective exercise plans for students. When students' physical conditions or exercise goals change, ChatGPT's high efficiency and flexibility can help students generate new plans in real-time [8]. The assistance of ChatGPT can help teachers reduce their workload and ensure that each student has access to their own sports program, thus promoting the development of students' physical intelligence.

### **2.3. Advantages of ChatGPT in Cognitive and Communication Intelligence**

Cognitive and communication intelligence includes interpersonal intelligence, intrapersonal intelligence, and naturalist intelligence. Cognitive and communication intelligence is divided into internal and external aspects, namely, cognition of one's own values and external environment, and external social communication [3]. As a generative language model, ChatGPT's humanization and sociality make it play an excellent role in communication with people. ChatGPT's large database and logical chain enable people to experience the feeling of communicating with real people. On the other hand, ChatGPT has a strong learning ability, which can not only correct errors through learning but also carry out deep learning according to optimization, to have more valuable and delicate conversations with people [9].

In terms of social media, ChatGPT can be used to provide users with personalized information and resources by using big data, and it also provides conversation partners and channels to calculate users' preferences through large databases. These advantages make ChatGPT play an advantageous role in the use of social media [10]. All in all, in terms of cognition and communication, ChatGPT uses its powerful learning ability and massive database functions to create a good communication platform for people. Its optimization function and deep learning have advantages for the development of people's cognition and communication intelligence.

The theory of multiple intelligences is different and practical. Difference means that different individuals have different potentials, so there are different advantages and problems in intelligence [11]. Practicality means that due to the constant changes in the environment and the development of oneself, the intelligence of an individual will also change accordingly. The intelligence changed according to the actual situation can help an individual solve problems and adapt to changes [3]. In education, the research of multiple intelligences theory combined with the teaching of different subjects provides many feasible teaching schemes for teachers and schools. According to the research, the theory of multiple intelligences is in line with the direction of educational reform, both focus on student-centered, create diversified teaching, and cultivate students' creative thinking [12]. The theory of multiple intelligences plays an important role in the development of education.

### **3. Problems of ChatGPT**

#### **3.1. Problems with Linguistic and Logical Intelligence**

Although language models such as ChatGPT provide great help to students' language learning and way of thinking, relying on language models without critical evaluation will hurt students' learning, and also have some risks [13]. The content generated by ChatGPT may yield misleading answers, for example by asking the wrong questions, which requires students to have high levels of judgment and critical thinking. In addition, the teaching mode generated by ChatGPT according to the different learning conditions and intellectual development of students lacks practice and will have errors [8].

American scholar Cass Sunstein proposed the concept of information cocoon, when people actively acquire knowledge, they pay more attention to what they are interested in and need, and thus ignore the acquisition of other information [14]. In the process of the continuous development of ChatGPT, the information cocoon effect has become a problem worthy of attention. When students use ChatGPT to assist learning or find relevant materials, ChatGPT can quickly generate answers for students, but most of the time it does not indicate the source of these materials or content and other content related to it, or even no source of content, only generated through the database. Although students can continue to ask questions to obtain this information that is not directly presented, students with insufficient self-learning ability, rarely continue to ask questions, but directly use the information generated by ChatGPT. This passive acceptance of knowledge will cause students to form a single mode of thinking, affecting their logical intelligence and critical thinking. Moreover, in the process of academic writing, this problem will lead to a lack of associations and deeper thinking for research topics. It is difficult for students to continue to improve and develop their linguistic and logical intelligence. The problem can also hinder students' progress, and not conducive to inspiring their potential.

#### **3.2. problems in Physical Intelligence**

The reliability of ChatGPT remains controversial. ChatGPT is not completely reliable in sports learning to improve one's physical condition, and its opinions or programs may be wrong. Since the suggestions it gives about sports are closely related to one's physical health, if students adopt wrong sports methods or wrong suggestions, it may bring harm to physical health and even cause serious consequences [10]. In the teaching of competitive sports, due to the deviation between virtual and reality, the virtual practice of ChatGPT cannot be useful completely. On the contrary, students may lose their ability to respond to changes in reality because they rely too much on the virtual technology

of ChatGPT, which is not conducive to the cultivation and development of students' physical arts intelligence.

### **3.3. Problems of ChatGPT in Cognitive and Communication Intelligence**

ChatGPT has potential risks to students' cognitive and communication intelligence. Research shows that ChatGPT generates conversations through database calculations, which will lead to people falling into the information fortress generated by the algorithm and getting used to conversations with fixed routines or formats in contact with ChatGPT, thus affecting the way individuals communicate or socialize world [11]. The rigid thinking caused by ChatGPT as a dialogue tool makes it difficult for people to trigger deep social communication, which will not only affect students' intelligence in external communication but also may indirectly affect students' mental health. In addition, the human-machine relationship between humans and artificial intelligence affects people's social interaction. ChatGPT's various functions make it more and more trusted by people, and people will invest more time and energy in using ChatGPT, and even become dependent on it, which means that there will be a conflict of time and energy between people's communication with ChatGPT and interpersonal communication, and some people may be immersed in the conversation with ChatGPT, thus neglecting real-world interaction.

## **4. Suggestion**

### **4.1. Take Advantage of ChatGPT's Diversity to Meet Individual Needs**

In the development of linguistic and logic intelligence, students can make use of the features generated by ChatGPT to query basic theoretical knowledge and use ChatGPT's huge database to conduct language learning training, to enrich their knowledge. Teachers can combine the theory of multiple intelligences with ChatGPT to stimulate students' interest in learning or assist in homework correction to reduce their pressure. ChatGPT can also be used to assist in a large number of repetitive works to save their own time, which makes them invest more time and energy in cultivating their professional abilities and improving the quality of classroom and teaching.

In terms of physical intelligence, students can make use of ChatGPT's advantages in the diversity of multiple intelligences and use ChatGPT to develop their own learning or training mode according to their own needs. They can also use ChatGPT's communication function to give feedback on their changes in time and conduct scientific intelligence training. Through ChatGPT, teachers can understand the differences of each student and focus on their ability development and physical and mental health.

### **4.2. Identify Deviations Between ChatGPT and Reality to Avoid Risks**

In terms of language and logical intelligence, students need to pay attention to the errors in the information provided by ChatGPT, cultivate various kinds of intelligence, but also pay attention to the ability to develop independent learning and discrimination. Students also need to avoid problems of thinking to harden caused by the information cocoon and constantly think critically. Teachers need to be careful to identify misinformation caused by ChatGPT and avoid giving wrong guidance to students.

In terms of physical intelligence, due to the difference between the virtual scheme provided by ChatGPT and reality, students should not rely too much on ChatGPT and neglect the ability to observe reality and adapt to changes. As for teachers, they should pay attention to the feasibility of learning programs with students' physical and mental health and communicate with students more to understand their situation.

In terms of cognition and communication, students should pay attention to privacy issues and should not easily disclose private information. When using ChatGPT, they should focus on whether the information is guided values. While communicating with artificial intelligence, they should also invest time in real interpersonal communication. Teachers should pay attention to students'

interpersonal communication to avoid mental health problems caused by students' excessive immersion in ChatGPT communication and neglect of interpersonal.

## 5. Conclusion

According to the characteristics of multiple intelligences theory -diversity and practicality, as well as the advantages and disadvantages of ChatGPT for different intelligences, the following conclusions can be drawn: In the diversity of multiple intelligences, the flexibility and diversity of ChatGPT are in line with the diversity characteristics of multiple intelligences, and can well meet the needs of students in cultivating different intelligences. Make a suitable learning plan for students, and constantly adjust and improve according to the changes of students. However, ChatGPT has shortcomings in the practicality of multiple intelligences. Practicality is based on reality and students' ability, but ChatGPT makes it difficult to predict changes in the real environment and cannot be completely correct, so it will mislead and differ to a certain extent, requiring people to have certain discernment and critical thinking ability, while students lack self-control and the ability to distinguish right from wrong. Habitual or dependent use of ChatGPT can lead to rigid thinking and a lack of response to changes in reality.

Relevant personnel in the field of education should actively adapt to the changes brought about by the development of big data in the educational environment. Given its complexity, they should not take an attitude of absolute opposition or absolute support or dependence. They should look at the advantages and disadvantages of ChatGPT from a different perspective and transform it into an auxiliary tool that will benefit people's various abilities.

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