The Application of Chat GPT in Online and Offline Blended Course Teaching: Taking the Teaching Design of Impairment Chapter as an Example

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Abstract. The emergence of artificial intelligence technology, represented by Chat GPT technology, has brought opportunities and challenges to education and teaching. How to make good use of AI technology to empower education and teaching is an urgent issue that the education industry needs to consider and solve. This article takes the teaching design of the asset impairment chapter in the intermediate financial accounting course as an example to explore the application of Chat GPT in Online and Offline Blended Course Teaching, aiming to use Chat GPT to empower classroom teaching, innovate teaching models, and guide students to make reasonable use of Chat GPT technology to empower learning.

Keywords: Chat GPT, Intermediate financial accounting, Teaching design.

1 Introduction

Chat GPT is a chat machine program developed by OPEN AI company. It is a natural language generation tool designed based on a large language model, with strong resource combination ability and text generation ability. It can automatically reply and intelligently engage in conversations. Due to its convenient access method and low operating threshold, Chat GPT has been widely used by the public since its launch (Meiju Jiang, Tiansheng Zuo, Xuanhua Chen, 2023) [1]. Chat GPT is commonly used in scenarios such as intelligent customer service, intelligent Q&A, and dialogue systems to provide users with an efficient and natural conversation experience (Junxiu Wang, 2023) [2].

Artistic Intelligence (AI) and natural language processing have significantly impacted education, bringing opportunities and challenges to education and teaching. As the most effective language model currently publicly available, Chat GPT has attracted widespread attention. Naveed Saif et al. (2023) pointed out that Chat GPT can help reduce students' stress levels [3]. Fei Song et al. (2023) explored the application of Chat GPT in the field of classroom teaching assistance and teaching resources based on the specific practice of teaching Chinese as a foreign language [4]. The study found that Chat GPT can assist in the construction of teaching resources, help teachers carry out

classroom teaching, promote students' foreign language learning, and is a very effective foreign language teaching tool. Chat GPT promoting new opportunities for innovative teaching and learning practices (Ahmad Habibi et al., 2023) [5]. Yunbo Jin et al. (2023) pointed out that using Chat GPT can help college students improve resource utilization efficiency, enhance their learning efficiency, interest, and problem-solving abilities, while providing timely learning feedback and guidance. However, improper use of Chat GPT can also lead to excessive dependence on technology, degradation of metacognitive abilities, threats to privacy and data security, and the emergence of academic fraud among college students [6]. Education should quickly adapt to the transformation of knowledge contribution methods brought about by artificial intelligence, make AI useful to teachers and students, and play a positive role in promoting educational reform (Lingyun Sun, 2023) [7]. Therefore, this article takes the teaching design of the asset impairment chapter as an example to explore the application of Chat GPT in blended online and offline course teaching. Through innovative teaching models, Chat GPT is organically integrated into classroom teaching, stimulating students' interest in learning, and guiding them to embrace and correctly use Chat GPT technology.

2 Application practice of Chat GPT in blended online and offline course teaching

Intermediate Financial Accounting is one of the first batch of blended online and offline courses in our school, relying on the construction of Tsinghua Education Online UMOOC. It is a core compulsory course for the finance and accounting major. The prerequisite course is "Basic Accounting", followed by "Advanced Financial Accounting" and other professional courses in accounting. This course is guided by financial accounting objectives and combines with the general economic activities of enterprises to explain the accounting methods of daily specific economic transactions of enterprises. The main content includes general introduction, monetary funds, accounts receivable and prepayments, inventory, fixed assets, intangible assets, investment real estate, financial assets, long-term equity investments, asset impairment, liabilities and borrowing costs, owner's equity, income expenses and profits, and financial reports. Next, this article takes the teaching design of the asset impairment chapter as an example to explore the application of Chat GPT in blended online and offline courses.

2.1 Teaching content and class hour arrangement of asset impairment chapter

Asset impairment is the tenth chapter of the intermediate financial accounting course, usually taught after completing the accounting of all asset elements of a company. The teaching content consists of three sections and eight knowledge points. The first section provides an overview of asset impairment, explaining the concept of asset impairment, the scope of application of asset impairment criteria, and the signs and tests of asset impairment. The second section is about the calculation of the recoverable amount of assets, which includes three knowledge points: the basic requirements for measuring

the recoverable amount of assets, the net amount after deducting disposal expenses from the fair value of assets, and the determination of the present value of expected future cash flows of assets. The third section is about the determination of asset impairment losses, which needs to explain two knowledge points: the recognition of asset impairment losses and the accounting treatment of asset impairment losses.

In order to better apply Chat GPT to course teaching, the traditional theoretical knowledge in this chapter has been restructured. The knowledge points have been designed into three levels: low-level, high-level, and challenge, with a total of 8 questions. Among them, there are 4 low-order questions, 3 high-order questions, and 1 challenging question. Students are required to use Chat GPD for pre-class discussions. In class, 2 cases are introduced to discuss 8 questions, as shown in Table 1. The teaching hours are arranged for 1 hour on the online UMOOC platform and 2 hours in the offline classroom.

Table 1. Design of Learning Questions for Asset Impairment Chapter.

Teaching Discussion Cases	Question type	Discussion questions
Case 1: The Case of Robot Eric	Low-order questions	Question 1: Please explain the relevant knowledge of impairment of fixed assets. What is asset impairment? Is impairment recognized for all assets of the enterprise? When should a company make provision for impairment?
	High-order questions	What is the recoverable amount of assets? How to handle accounting for impairment of enterprise assets? What impact will be accounting for asset impairment have on enterprises?
Case 2: Bad debt event of YT company	Challenging questions	How did YT company increase profits when offsetting bad debts?

2.2   Teaching Objectives and Key Difficulties

According to the talent training plan and teaching outline requirements, the teaching objectives of the asset impairment chapter are divided into three levels: knowledge objectives, ability objectives, and quality objectives. In terms of knowledge objectives, it is hoped that students can explain the concept and scope of application of asset impairment through this chapter, and be able to correctly judge whether assets are impaired or not; Be able to master relevant knowledge such as calculating the recoverable amount of assets and accounting for asset impairment losses. In terms of ability objectives, it is hoped that students can correctly make accounting treatment for asset impairment losses through specific cases. Improve students' ability to analyze and solve

problems. In terms of quality objectives, group discussions are used to enhance students' communication and teamwork abilities. Enable students to establish the concept of integrity and the rule of law. The focus of this project is on the calculation of recoverable amounts, determination of asset impairment losses, and accounting treatment. The difficulty lies in determining the recoverable amount.

2.3　Teaching process and teaching methods

The main teaching methods used in this chapter include PBL based blended learning, case study teaching, and discussion-based teaching. The specific teaching process is shown in Figure 1.

Before class, first make 8 questions into 8 lots one week before class, and students and teachers will draw lots to determine their discussion tasks (students will draw one from each group, leaving 3 for the teacher). After students clarify their research questions, they use the resources of the UMOOC platform to conduct pre-class preview and participate in pre-class topic discussions. At the same time, use Chat GPT to discuss selected topics and evaluate the answers output by Chat GPT. Make a PPT of the group discussion and evaluation results, and submit it to the teacher for review and guidance.
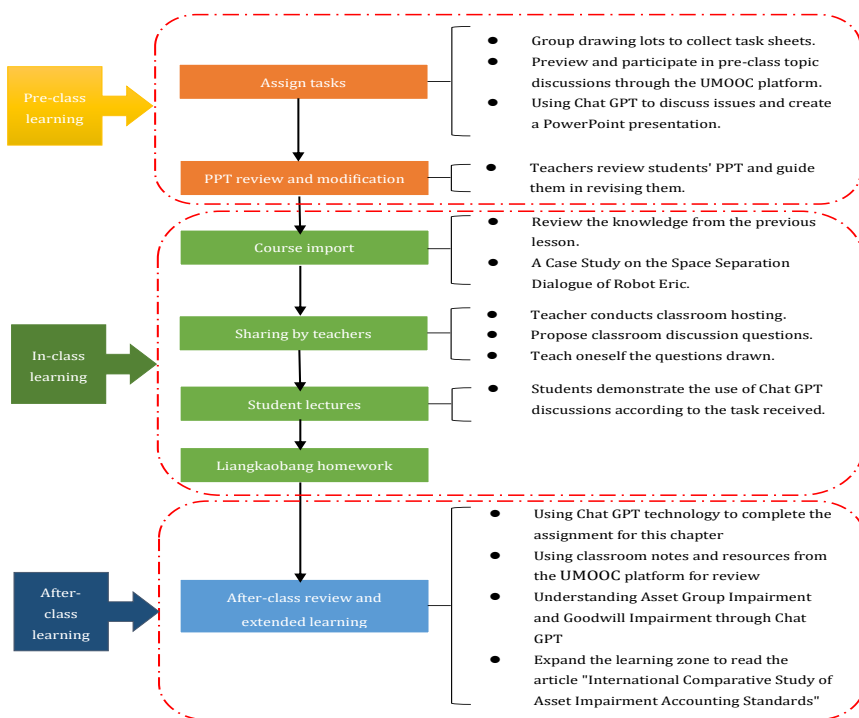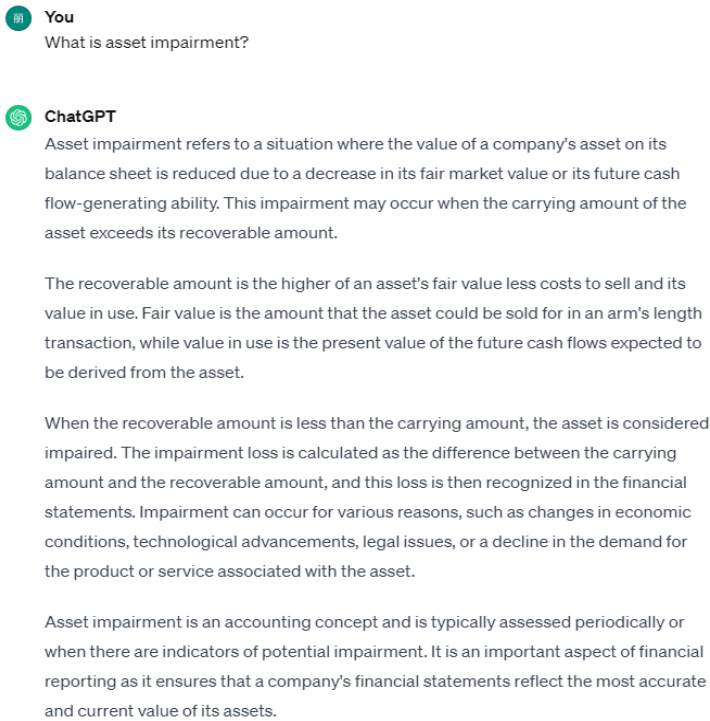

Fig. 1. Application diagram of Chat GPT in blended online courses.

During the classroom teaching process, the teacher utilized stage hosting skills and focused on the case of Robot Eric Company and YT Company's bad debt provision as the main thread. Using Chat GPT, the teacher discussed 8 questions and presented the results of pre-class group discussions. During the classroom presentation process, students and teachers rated each other. Teachers participate in PK presentations for students in the classroom to stimulate their learning enthusiasm and build a community of learning between teachers and students. In the last 10 minutes of class, students are required to complete the Liangkaobang homework to help them digest and accumulate the knowledge learned in this class.

The specific teaching details in the classroom are shown in Table 2:

Review: The teacher first briefly reviews Chapter 2 on long-term equity investment in the form of a mind map. And invite the group students who have been selected as Question 1 in Table 1 to present the results of the extracurricular discussion and provide feedback.

You
What is asset impairment?

ChatGPT
Asset impairment refers to a situation where the value of a company's asset on its balance sheet is reduced due to a decrease in its fair market value or its future cash flow-generating ability. This impairment may occur when the carrying amount of the asset exceeds its recoverable amount.

The recoverable amount is the higher of an asset's fair value less costs to sell and its value in use. Fair value is the amount that the asset could be sold for in an arm's length transaction, while value in use is the present value of the future cash flows expected to be derived from the asset.

When the recoverable amount is less than the carrying amount, the asset is considered impaired. The impairment loss is calculated as the difference between the carrying amount and the recoverable amount, and this loss is then recognized in the financial statements. Impairment can occur for various reasons, such as changes in economic conditions, technological advancements, legal issues, or a decline in the demand for the product or service associated with the asset.

Asset impairment is an accounting concept and is typically assessed periodically or when there are indicators of potential impairment. It is an important aspect of financial reporting as it ensures that a company's financial statements reflect the most accurate and current value of its assets.

Fig. 2. The answer to question 2 output by Chat GPT

(2) Course introduction: By playing a video case of the robot Eric, the goal of cross temporal and spatial dialogue is achieved, and the discussion of questions 2-7 in Table 1 is gradually introduced layer by layer.

(3) Explanation of new knowledge in this chapter: Taking question 2 in Table 1 "What is asset impairment?" as an example, the teacher first asks questions about the learning of theoretical knowledge to test the learning of UMOOC online knowledge.

Then use Chat GPT to search for the answer to the question, as shown in Figure 3. Guide students to think about whether the answer output from Chat GPT is correct, and work together with students to evaluate the answer output from Chat GPT (Figure 3). Finally, through the discussion of question 7 in Table 1, integrate it into the ideological and political education curriculum of this chapter. And introduce "YT Bad Debt Event" to guide students to think about the question 8 in Table 1.

Table 2. Asset Impairment Chapter Teaching Control Table.

Time	Question type	Discussion questions
8:40-8:42	Review	The teacher briefly reviewed Chapter 2 on long-term equity investment in the form of a mind map.
8:42-8:47	Course Introduction 1	The first group of students will present the first question to help students review the relevant basic knowledge of fixed asset impairment.
8:47-8:49		Introduce the robot Eric and play the first video for crowdfunding investment plans.
		Play the second robot video to introduce the discussion of the second and third questions.
8:49-8:55	Teacher	The teacher uses Chat GPT to answer the first question.
8:55-9:00	Student	Students present their discussion results on the third question using Chat GPT outside of class.
9:00-9:02	Comment time	Students provide feedback and ratings on the teacher's answers.
9:02-9:03	Case 1 Introduction 2	Play the third robot video and introduce the fourth question for discussion.
9:03-9:08	Teacher	Teacher answers the fourth question.
9:08-9:11	Case 1 Introduction 2	Play the fourth robot video and introduce a discussion on the fifth and sixth questions.
9:11-9:19	Student	Students present their discussion results on the fifth question using Chat GPT outside of class.
9:19-9:33		Student and teacher feedback.
9:33-9:38	Student	Students present their discussion results on the sixth question using Chat GPT outside of class.
9:38-9:40		Student and teacher feedback.
9:40-9:42	Case 2 Introduction	The teacher introduces Case 2 and discusses the seventh and eighth questions. And introduce ideological and political education into the curriculum.
9:42-9:47	Teacher	Teacher answers the seventh question.
9:47-9:55	Student	Students present their discussion results on the eighth question using Chat GPT outside of class.
9:55-9:57		Student and teacher feedback.
9:57-9:59	Summary	The teacher will summarize the knowledge of this lesson.
9:59-10:09	Liangkaobang homework	Students summarize and reflect on the knowledge of this lesson, and complete the Liangkaobang homework.
10:09-10:10	Say good-bye	Play the 5th robot video, robot Eric, goodbye to everyone.

Review, expand learning, practice after class, submit assignments, and complete test classes. Firstly, students are required to use Chat GPT technology to complete the homework for this chapter, with the format shown in Table 3, and submit the homework to the Homework section of this chapter on the UMOOC platform. Secondly, use class-room notes and resources from the UMOOC platform for review. Then, use Chat GPT to understand asset group impairment and goodwill impairment. Go to the expansion learning zone to read the article "International Comparative Study of Asset Impairment Accounting Standards", to explore the cutting-edge knowledge of asset impairment, and upload the reading notes to the comment section. Fourthly, use Chat GPT to search for relevant resources and share your insights on learning about the " ZONECO Inci-dent" in the forum of the "Accounting Ideological and Political Education Project Four" on the UMOOC platform. Fifth, download exercise questions for post class practice and participate in the unit test of this chapter.

Table 3. Offline homework templates for the application of Chat GPT technology in blended online and offline courses

HOMEWORK
Assignment Module 1: Please write down the homework answers you have organized using Chat GPT search below.
Assignment Module 2: Please use the knowledge learned in this chapter to provide feed-back on Chat GPT answers. Please write the content that you agree with, the content that you disagree with, and your own answer.

2.4   Course Ideological and Political Design

The integration of ideological and political education into the curriculum adheres to the principle of combining online and offline teaching. In order to achieve the established quality teaching goals, this chapter designs two positive and negative cases of ideolog-ical and political education in the curriculum to guide students to establish the concepts of integrity and the rule of law, improve communication and teamwork abilities. The specific details are as follows:

Offline classroom ideological and political integration point (positive example): In the classroom, by discussing the bad debt incident of YT Company with students, we convey the socialist core values of integrity and the rule of law to students, and help them establish awareness of integrity and the rule of law. At the same time, it is hoped that students can improve their communication and teamwork skills through group dis-cussions, sharing knowledge.

Online ideological and political learning after class (counter example): Students are required to use Chat GPT to search for the ZONECO incident. List your search questions, answers, and reading insights in the "Accounting Ideological and Political Education Project Four" on the UMOOC platform.
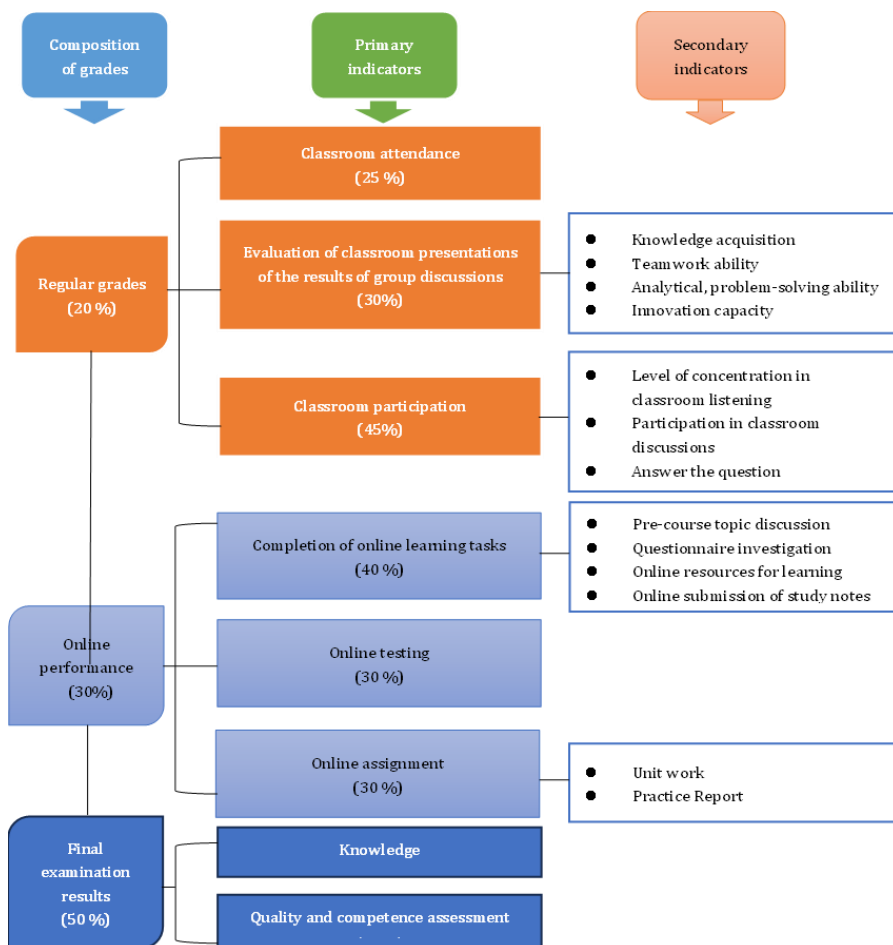
2.5   Design of Assessment Indicators

Fig. 3. Application diagram of Chat GPT in blended online and offline courses

This course is based on the basic theories of formative evaluation and summative evaluation, and redesigns the course assessment indicator system, aiming to build a comprehensive assessment and evaluation system. The evaluation indicators of this indicator system involve the entire learning process of students before, during, after, and at the end of the semester, as shown in Figure 3. The calculation of the overall course evaluation score is shown in formula (1):

Overall course evaluation score=20% of regular grade+30% of online grade+50% of final exam grade (1)

On the basis of the course assessment index system, the assessment indicators involved in this lesson include the following three aspects:

Firstly, assess the completion of online learning tasks. Including pre-class topic discussions and online resource learning, accounting for a total of 10% of the online grades.

Secondly, classroom learning assessment. Including attendance for this class, accounting for 10% of the total attendance score, and group discussions, accounting for 30% of the total classroom presentation and evaluation score of the course group discussion results. "Liangkaobang" homework accounts for 1.5% of classroom participation.

Thirdly, the final exam accounts for about 8% of the total score of the final exam paper.

2.6   Teaching resources and information-based teaching methods

Teaching resources: In order to better complete teaching tasks and achieve established teaching objectives, this class is equipped with rich teaching resources for students, among which online teaching resources are mainly placed on the UMOOC teaching platform Including lecture notes, courseware, teaching videos, case discussions, tests, exercises, assignments, cutting-edge accounting trends, accounting ideology, etc. please see http:// eol. shengda.edu.cn/meol/jpk/course/layout/newpage/index. jsp? Coursed =12682.

Information based teaching methods: Teachers use information-based teaching methods such as Rain Classroom and Chat GPT during the teaching process. Mainly utilizing the barrage and testing functions of Rain Classroom for voting and testing.

3   Teaching Reflection

This class explores and practices the application of Chat GPT in blended online and offline courses. The teaching design has some innovation, but also faces certain challenges. Specifically, as follows:

3.1   Innovations

The innovation points of this teaching design mainly include two aspects: teaching content innovation and teaching method innovation, as follows:

Innovation in teaching content: The teaching content of this lesson has restructured traditional knowledge content. Design the theoretical knowledge of asset impairment in Chapter 10 into three levels: low order, high order, and challenging, totaling 8 questions, and introduce the discussion of 8 questions with two cases.

Innovation in teaching methods: This lesson mainly adopts a PBL based split class-room teaching method, accompanied by participatory teaching, discussion teaching, and case teaching. The teaching method is relatively innovative.

3.2   Challenges

The challenges encountered in this teaching process mainly include the following three points. Firstly, students don't know how to ask questions while searching for materials. Suggest students to conduct group discussions to discuss how to ask Chat GPT questions about their own research tasks. Second, the use of Chat GPT in China is limited, and students may encounter difficulties in using it. It is suggested that students use ERNIE Bot and Bing instead of Chat GPT. Thirdly, some students have some fear of Chat GPT technology due to their initial exposure, fearing personal privacy leakage. Suggest educating students and correcting their erroneous thoughts.

4   Conclusion

The construction of online and offline Blended courses is mainly to enable course teaching by using Internet technology. How the artificial intelligence technology represented by Chat GPT enables course teaching is worthy of in-depth discussion. This paper mainly discusses the application of Chat GPT in online and offline Blended courses from the perspective of teacher teaching and student learning, taking the teaching design of asset impairment chapter as an example. It provides a reference for the teaching of Internet technology and artificial intelligence technology. However, the AI technology represented by Chat GPT should not be limited to course teaching. As an online platform company, we should also consider how to use AI technology represented by Chat GPT to implant into the platform and empower course teaching.

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