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Teaching Design of "Internet Insurance" course in the Age of Artificial Intelligence

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Abstract

The rapid development of artificial intelligence technology has profoundly changed the operation mode of Internet Insurance, posing new requirements for the teaching content and methods of the "Internet Insurance" course. Currently, there are common problems in this course in colleges and universities, such as lagging teaching content updates, insufficient AI technology cases, weak practical teaching, and single assessment methods. This paper takes the "Internet Insurance" course as the research object, analyzes the impact of artificial intelligence on the Internet Insurance industry and its new requirements for course teaching, diagnoses the main problems existing in the current course teaching, and proposes a course teaching reform path from four dimensions: teaching content update, teaching method innovation, practical link strengthening, and assessment method optimization, aiming to improve the quality of course teaching and cultivate students' core abilities to adapt to the needs of the Internet Insurance industry in the AI era.

Keywords

Artificial intelligence; Internet Insurance Courses; Teaching reform; Practical teaching.

1. Introduction

In recent years, the Internet Insurance business has witnessed a rapid growth trend. According to the "China Internet Insurance Development Report (2024)" jointly released by the Tsinghua University's PBC School of Finance and Yuanbao, in 2024, China's Internet Insurance premium income reached 566.6 billion yuan, with a year-on-year growth of 14.5%, and the penetration rate was close to 10% [1]. Artificial intelligence technology has been deeply applied in various aspects such as product pricing, precise marketing, intelligent underwriting, automatic claims processing, and risk control. However, the teaching goals of insurance-related courses in universities are still mainly focused on imparting traditional insurance knowledge, emphasizing the cultivation of students' understanding of basic insurance principles and offline business processes. The attention to Internet Insurance, especially the new business models, new technologies, and new models in the Internet Insurance era, is significantly insufficient. As a core course directly connecting to the industry's cutting-edge, the "Internet Insurance" course urgently needs to respond to this change and re-examine the appropriateness of its teaching content and teaching methods. Therefore, this article first analyzes the impact of artificial intelligence on the Internet Insurance industry and the new requirements for course teaching, then diagnoses the main problems existing in the current course teaching, and finally proposes a course teaching reform path from four dimensions: teaching content, teaching methods, practical components, and assessment methods.

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2. Industry transformation and new teaching requirements

2.1. New Characteristics of Internet Insurance Driven by AI

Artificial intelligence technology is reshaping the industry structure of Internet Insurance from multiple dimensions. In terms of products and pricing, traditional Internet Insurance products are mainly standardized, but AI technology enables dynamic personalized pricing based on user profiles. For example, ZhongAn Insurance's "Step-by-Step Insurance" collaborates with sports apps to dynamically adjust premiums based on the user's daily step count. The more exercise, the lower the premium, achieving a transformation from "static" to "dynamic" insurance pricing [2]. In marketing and services, embedded insurance has become the mainstream form. Scenario-based products such as return shipping insurance and flight delay insurance are realized through real-time triggering and automatic insurance coverage on e-commerce platforms and travel platforms. Intelligent customer service systems can respond to user inquiries 24/7, significantly improving service efficiency. In underwriting and claims processing, AI technology has achieved a leap from manual review to automated processing. According to the "China Internet Insurance Development Report (2024)", the online claim processing rate of some insurance companies has exceeded 90%, and the average time for flash claims has been shortened to 7.4 minutes. In risk control, technologies such as anti-fraud engines based on big data, image recognition technology, and remote identity recognition are widely applied in Internet Insurance business, effectively reducing moral hazard and insurance fraud.

2.2. New Requirements for Course Teaching

The in-depth application of artificial intelligence in the Internet Insurance industry has raised three new requirements for the teaching of the "Internet Insurance" course. First, the teaching content needs to be updated promptly. The course should not merely focus on the basic contents such as the concept, development history, product types, and regulatory policies of Internet Insurance. Instead, it must incorporate the application logic, typical cases, and development trends of AI technology in all aspects of Internet Insurance into the teaching content, enabling students to understand the actual operation mode of "AI + Internet Insurance". Second, the teaching method needs to shift from theoretical lectures to case-driven learning. The application of AI technology in Internet Insurance is highly practical and situational. Simple theoretical explanations are difficult to enable students to form a concrete understanding. It is necessary to enhance students' understanding through rich case analysis and scenario simulations. Third, the cultivation of students' abilities needs to expand from knowledge acquisition to technical literacy. Students not only need to understand the basic principles of Internet Insurance but also should possess data thinking, technical sensitivity, and ethical awareness regarding technology, and be able to identify and consider issues such as privacy leakage, algorithm discrimination, and compliance risks brought about by AI applications.

3. Main Problems in Course Teaching

3.1. Outdated Teaching Content

Currently, the teaching content of the "Internet Insurance" course mostly remains at the traditional sections such as basic concepts, development history, main product types, operation processes, and regulatory frameworks. Regarding how AI technology can play a role in aspects like product design, precise marketing, intelligent underwriting, automatic claims processing, and risk control in Internet Insurance, the courses often only make brief mentions or completely omit these points. For instance, when explaining Internet Insurance products, most

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textbooks and classes still mainly use early cases such as return freight insurance and travel accident insurance as examples, while lacking systematic introductions to new forms of products such as dynamic pricing products based on AI algorithms (such as UBI auto insurance, Step-by-Step Insurance) and intelligent underwriting products (such as intelligent insurance advisors). This content lag results in a significant "generation gap" between the knowledge students acquire and the actual industry situation, failing to meet the knowledge requirements of employers for Internet Insurance professionals.

3.2. Single Teaching Method

The current teaching method of the "Internet Insurance" course mainly relies on the teacher's lecture in the classroom, with students in a passive receiving role. Although the course name includes the word "Internet", the teaching process rarely involves actual "surfing the Internet". Students lack the opportunity to experience Internet Insurance products and operate Internet Insurance platforms themselves, and also lack an intuitive understanding of the application of AI technology in insurance. For example, when explaining intelligent customer service, students have never actually conversed with the intelligent customer service; when explaining dynamic pricing, students have never seen the real pricing interface and algorithm logic. This "teaching about the Internet but not actually surfing the Internet" teaching method causes a serious disconnection between the theoretical and practical aspects of the course, making it difficult for students to form a true understanding of Internet Insurance.

3.3. Weak Practical Training

Internet Insurance is a highly applicable course, but the current practical teaching is generally weak. In the curriculum design of most universities, there are no practical contents such as experience with Internet Insurance platforms, data analysis training, and product design simulation. Even if students complete the course study, they still do not know how to complete a complete insurance application process on actual Internet Insurance apps, do not know the differences between different platform insurance products, and do not understand the specific operation methods of intelligent underwriting and intelligent claims. [3] pointed out that the entry threshold for Internet Insurance is relatively low, and students can easily participate in it through online shopping and other channels. However, in teaching, this convenient condition is rarely utilized for experiential teaching, which is both a waste of teaching resources and a deficiency in teaching methods.

3.4. Inappropriate Assessment Method

Currently, the assessment methods for the "Internet Insurance" course mostly rely on final exams, with question types including definitions, short-answer questions, and essay questions. The main focus is on students' memorization and understanding of the textbook knowledge. This assessment method is difficult to evaluate students' practical operation ability, analytical and judgment ability, and innovative thinking ability. For instance, students may be able to accurately recite the four business models of Internet Insurance, but when faced with a real Internet Insurance product page, they are unable to analyze the pros and cons of the product design, identify the deficiencies in information disclosure, and assess the potential risks. The mismatch between assessment and ability leads to students being "able to recite but not able to apply", making it difficult for the learning outcomes of the course to be transformed into practical working abilities.

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4. Course Teaching Reform Paths

4.1. Updating Teaching Content

The teaching content of the "Internet Insurance" course needs to be systematically updated. While retaining the basic theories of Internet Insurance, a special module on the application of AI technology should be added. Specifically, the course content can be restructured into four sections. The first section is the foundation of Internet Insurance, covering concepts, development history, market status, business models, and regulatory policies, helping students build an overall understanding of Internet Insurance. The second section is Internet Insurance products and operations, systematically introducing the characteristics, design logic, and operation processes of various Internet Insurance products, with a particular focus on case studies of new forms of products such as dynamic pricing products, scenario-based products, and inclusive products. The third section is the application of AI technology in Internet Insurance, which is the core content of the course update. This section should explain the technical logic and practical cases of AI in various aspects of Internet Insurance, such as product design (user profiling, demand prediction), precise marketing (intelligent recommendations, embedded marketing), intelligent underwriting (automated risk assessment), intelligent claims (image recognition, automatic damage assessment), and risk control and fraud prevention (anomaly detection, relationship network analysis). Each topic should be accompanied by a specific enterprise case for explanation, such as the dynamic pricing case of Zhongan's "Step-by-Step Insurance", the image recognition anti-fraud case of broken screen insurance, and the intelligent underwriting case of million medical insurance. The fourth section is the challenges and trends of Internet Insurance, including information security, moral risk, regulatory dilemmas, technological ethics, and future development trends, to cultivate students' critical thinking and risk awareness [4].

4.2. Innovating Teaching Methods

The teaching method of the "Internet Insurance" course needs to shift from a single classroom lecture to diversified interactive teaching. Firstly, experiential teaching methods should be introduced. At the beginning of the course, the teacher can assign an Internet Insurance Platform Experience Task" to the students, requiring them to register and use at least two mainstream Internet Insurance platforms (such as Ant Insurance, Weipai Insurance, Zhongan APP, Shuidi Insurance, etc.) to complete the entire process of product browsing, product comparison, intelligent insurance application, online customer service consultation, and write an experience report. The content of the experience report includes: interface and user experience evaluation of the platform, analysis of product information transparency, quality of intelligent customer service response, convenience of the insurance application process, and comparison of differences with other platforms. In the classroom, the teacher organizes students to share their experience feelings and discuss the advantages and disadvantages of different platforms as well as existing problems. This experiential teaching can enable students to establish an intuitive understanding of Internet Insurance in real scenarios, enhance their learning initiative and participation.

Secondly, case-driven teaching should be strengthened. Teachers can design a series of teaching cases based on typical products, technologies and events of Internet Insurance. In terms of product cases, representative products such as million medical insurance, Huiminbao, return shipping insurance, UBI auto insurance can be selected to analyze their product logic, pricing mechanism, user positioning and market performance. In terms of technical cases, dynamic pricing of BuShiBao, image recognition of broken screen insurance, dialogue system of intelligent customer service can be selected to explain the technical principles and application effects. In terms of event cases, cases such as "invisible deduction" incident and misleading

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marketing penalty cases can be chosen to guide students to discuss from the perspectives of consumer rights, enterprise compliance, and regulatory systems. For each case, students are required to read the materials in advance, participate in discussions in class, and complete analysis reports after class, forming a complete learning loop of "before class - during class - after class".

4.3. Strengthening Practical Training

Practical teaching is an indispensable part of the “Internet Insurance” course. The course should include specific practical sections to enable students to deepen their understanding of theoretical knowledge through hands-on activities. First, a simulation operation training on the Internet Insurance platform can be arranged. Teachers can design a complete set of simulation tasks, requiring students to complete them on a virtual or real Internet Insurance platform: registering an account, selecting a health insurance product for simulation purchase, filling out health information, experiencing the intelligent underwriting process, initiating a simulated claim application, and having a conversation with the intelligent customer service, etc. Through this series of operations, students can fully understand the entire process of Internet Insurance from application to claim settlement, and comprehend the technical support and user experience of each link.

Secondly, simple data analysis training can be introduced. Teachers can utilize public data or de-identified data provided by enterprises to guide students in completing simple data analysis tasks. For instance, they can provide a quarter's worth of user purchase data from an online health insurance platform (such as age, region, gender, product type purchased, premium amount, etc.), and require students to use Excel to complete data organization, statistics, and visual analysis. Students should identify the purchasing preferences of different groups of people and propose product optimization or marketing improvement suggestions. This training does not require students to master complex programming skills; instead, the focus is on cultivating the awareness and ability to "express with data", which is crucial for understanding the data-driven logic of Internet Insurance in the AI era.

Thirdly, an Internet Insurance Product Design Group activity can be carried out. Students can be divided into several groups, and each group is tasked with designing a creative plan for an Internet Insurance product targeted at a specific group of people. The plan should include: a profile of the target group, the coverage and pricing logic of the product, application scenarios of AI technology (such as dynamic pricing, intelligent underwriting, anti-fraud, etc.), marketing and promotion strategies, and risk and compliance analysis. Each group presents their plan in class and receives mutual evaluations. The teacher provides comments and guidance. This activity can help students develop their product thinking, teamwork skills, and presentation abilities, and apply the knowledge learned in the course to solve practical problems.

4.4. Optimizing Assessment Methods

The assessment method for the “Internet Insurance” course should shift from the "final exam based on a single test paper" to a more comprehensive evaluation approach that emphasizes both the process and the final exam, as well as combining knowledge and skills. In terms of the evaluation structure, the proportion of regular grades should be appropriately increased to create a reasonable balance with the final exam results. The composition of regular grades should be diversified to comprehensively reflect students' level of engagement and skill development throughout the course. Specifically, the Internet Insurance platform experience report can assess students' ability to observe, compare, and analyze real Internet Insurance products; the participation in classroom case discussions can reflect students' pre-class preparation, depth of thinking, and communication and expression skills; data analysis practical assignments can test students' practical operational ability in handling real data and extracting business insights; and the product design group proposals and presentations can

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comprehensively evaluate students' product thinking, teamwork, innovation awareness, and presentation skills. Through diversified regular assessment projects, students should be guided to shift from passive knowledge acquisition to active exploration and practice. At the same time, the final assessment should mainly consist of ability-oriented questions such as case analysis and scenario application, forming a complete assessment system that combines formative evaluation and summative evaluation.

The form and content of the final exam also need to be reformed. The types of exam questions should shift from mainly including multiple-choice questions and short-answer questions to mainly including case analysis questions, scenario application questions, and scheme design questions. For example, a screenshot of a real Internet Insurance product page can be provided, and students are required to analyze the coverage, pricing strategy, information disclosure completeness, and potential risks of the product; or a user scenario (such as "a 55-year-old person with a history of hypertension who is a flexible employee wants to purchase health insurance") can be given, and students are required to recommend an appropriate Internet Insurance product for the user and explain the reasons; or a set of user purchase data can be provided, and students are required to conduct a simple analysis and propose marketing suggestions. This assessment method can effectively evaluate students' ability to apply knowledge to solve practical problems, avoiding the drawbacks of "memorizing by rote and forgetting after the exam".

5. Guarantee Conditions for the Implementation of Course Teaching

The implementation of the “Internet Insurance” course teaching reform requires the school to provide necessary guarantees in terms of teachers, resources, and school-enterprise cooperation. In terms of teachers, the school should support the instructors to participate in specialized training in insurance technology, data analysis, and application of artificial intelligence, and encourage teachers to conduct short-term visits or take-up positions at Internet Insurance companies to accumulate industry experience. At the same time, Internet Insurance enterprise product managers, data analysts, risk control experts, etc. can be invited to serve as guest lecturers for the course and participate in the teaching of some topics or case sharing. In terms of resources, the school should support the construction of teaching resources for the course, including compiling or selecting appropriate textbooks for the students' level of the “Internet Insurance” course, establishing an Internet Insurance teaching case database, purchasing or developing an Internet Insurance simulation training platform, etc. In terms of school-enterprise cooperation, the school can establish cooperative relationships with Internet Insurance companies and insurance technology platforms to provide internship opportunities for students and invite enterprise experts to participate in course design and teaching evaluation, so that the course content can be updated in line with industry demands.

6. Conclusion

Artificial intelligence is profoundly transforming the industry structure and operational logic of Internet Insurance, which poses urgent demands for updating the content, innovating the methods, strengthening practical training, and optimizing assessment in the teaching of the “Internet Insurance” course. The teaching of this course must keep pace with the development of the industry and systematically incorporate the application logic, typical cases, and cutting-edge trends of AI technology in Internet Insurance into the teaching content. Through various methods such as experiential teaching, case-driven teaching, data analysis training, and product design activities, it can stimulate students' interest in learning and practical ability. Through diversified assessment methods, the learning effectiveness of students can be comprehensively evaluated. Only in this way can the “Internet Insurance” course truly become a bridge

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connecting school education and industry practice, and cultivate application-oriented talents who can meet the development needs of the Internet Insurance industry in the AI era.

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