

# How to Construct Immersive Anti-Fraud Education Curriculum

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**Abstract:** With the rapid development of online commercial services and mobile payments, internet fraud methods are emerging in an endless stream, posing serious threats to individuals and society. To enhance the effectiveness of anti-fraud education and improve the cyber security awareness and anti-fraud capabilities of the public, especially the younger generation. Based on an analysis of the current severe situation of internet fraud and its impact on society, this paper summarizes and evaluates the shortcomings and areas for improvement of existing traditional anti-fraud education methods. It combines the theoretical basis of immersive education and its application in other educational fields to propose the idea of constructing an immersive anti-fraud education curriculum. The paper analyzes the advantages of immersive anti-fraud education, including enhancing student engagement and experience, improving learning outcomes, providing personalized learning plans, stimulating learning interest, and achieving real-time feedback and adjustments. Several feasible implementation methods for immersive anti-fraud education are presented, combining emerging virtual reality technology and real-life interactive games. Each method can enhance students' fraud prevention awareness and skills to varying degrees. The paper also provides a detailed introduction on how to design an immersive anti-fraud education curriculum, including the setting of teaching objectives, content design, technology application, teaching methods, evaluation methods, and continuous improvement. Through this research, we hope to provide educators with a new perspective and method to help students better protect themselves in the online environment, while also contributing to the development of the field of cybersecurity education.

**Keywords:** Anti-Fraud; Immersive Education Curriculum; Cybersecurity Education.

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## 1. Introduction

### 1.1. Background

The China Internet Network Information Center (CNNIC) released the 53rd "Statistical Report on the Development of the Internet in China," which shows that as of December 2023, the number of internet users in China reached 1.092 billion, an increase of 24.8 million from December 2022, with an internet penetration rate of 77.5%. Online commercial services and mobile payments, driven by internet development, have now covered almost all aspects of people's lives. However, while the internet provides us with convenient services, it also facilitates the implementation of fraud by criminals. According to the "2023 Mobile Payment Security Survey Report" released by China Union Pay, 87.4% of respondents reported receiving various types of fraudulent information. Among these, SMS, phone calls, and emails remain the primary channels for spreading fraudulent information, with deeper infiltration into social media and short video platforms. Fraudsters specifically target minors and students, such as scams involving free game equipment mainly aimed at minors and false shopping or rebate scams more concentrated among college students. The report also indicated that the majority of minors who fell victim to telecom fraud were elementary school students, accounting for 66.3%. High school students, on the other hand, experienced higher rates of significant financial loss from such fraud, with 41.7% losing more than 5,000 yuan. Additionally, 75.7% of college students reported receiving fraudulent information.

### 1.2. Problem Statement

Students, as a group with relatively weak safety awareness

and prevention abilities, have become key targets for fraud by criminals. Due to a lack of independent financial resources and immature psychological development, students are prone to severe psychological issues after being scammed, causing significant harm to their physical and mental health as well as family harmony. As the frontline of anti-fraud education for students, it is crucial to effectively prevent and address the harm caused by fraud in schools. Although schools across the country have launched anti-fraud and anti-deception thematic education campaigns in recent years, problems such as incomplete safety education prevention systems, monotonous forms, low student interest, and lackluster educational outcomes still exist. Particularly for the new generation of adolescents with independent thinking and distinct personalities, it is necessary to move away from "preachy" and "input-based" education forms and adopt more personalized approaches, such as scenario simulations and case reenactments. Combined with modern technology, students should no longer participate as third parties but be "immersively" integrated into anti-fraud education to truly achieve the effectiveness of safety-themed education.

### 1.3. Research Objectives

The main purpose of this study is to explore how to construct an immersive anti-fraud education curriculum to enhance students' interest and engagement in learning, and to strengthen their fraud prevention awareness and coping skills. By assessing the limitations of traditional anti-fraud education, exploring the theoretical basis and application prospects of immersive education, a detailed curriculum framework is designed. This study aims to provide educators with new teaching methods and implementation strategies to promote and apply immersive anti-fraud education, thereby

comprehensively enhancing students' cyber security awareness and prevention capabilities.

## **2. Literature Review**

### **2.1. Traditional Anti-Fraud Education**

#### **Methods**

Traditional anti-fraud education is mainly conducted through lectures and presentations, distribution of promotional materials, videos and case analysis, as well as exams and assessments. Among these, lectures and presentations are conducted by experts or police officers to impart anti-fraud knowledge. Promotional materials, including leaflets and manuals, are used to disseminate anti-fraud information. Videos and case analysis involve showing anti-fraud propaganda films and analyzing typical fraud cases to help students understand fraud techniques and prevention methods. Exams and assessments are primarily used to test students' grasp of anti-fraud knowledge. These traditional methods mainly focus on one-way information transmission, emphasizing knowledge delivery and comprehension.

### **2.2. Immersive Education Theories**

The theoretical foundation of immersive education mentioned in this paper mainly derives from constructivist learning theory, experiential learning theory, and multisensory learning theory.

1) Constructivist learning theory posits that learning is an active process where students construct their own knowledge systems through interaction with their environment. Immersive education creates an interactive, immersive learning environment that enables students to explore and understand knowledge in real contexts, thereby promoting deep learning.

2) Experiential learning theory, proposed by David Kolb, emphasizes learning through actual experiences and reflective processes. Immersive education simulates real-life scenarios, allowing students to learn through experiences and interactions, thereby enhancing their understanding and retention of knowledge.

3) Multisensory learning theory emphasizes learning through engaging multiple senses to improve learning outcomes. Immersive education leverages emerging technologies such as virtual reality (VR) and augmented reality (AR) to provide visual, auditory, and tactile experiences, enhancing the sense of immersion and engagement in learning.

Immersive education has already been widely applied in many educational fields. For example, in medical education, virtual reality technology allows medical students to perform simulated surgical operations in a virtual operating room, practicing complex surgical techniques and improving practical skills and emergency response capabilities. In vocational training fields such as engineering and aviation, immersive simulation training enables employees to perform equipment operation and troubleshooting exercises in a safe virtual environment, reducing the risks associated with actual operations. In language learning, using immersive language learning applications and virtual reality language learning platforms allows students to engage in communication and practice within a virtual language environment, enhancing the effectiveness and fluency of language acquisition. In history and cultural education, virtual reality technology enables students to "visit" historical sites and cultural landmarks and

to recreate historical events, enhancing the visual and engaging aspects of learning about history and culture. In military training, immersive education simulates real battlefield environments, allowing soldiers to conduct tactical training and respond to emergencies, thereby improving combat skills and team coordination abilities.

### **2.3. Recent Advances in Anti-Fraud Education**

#### **1) Digital Anti-Fraud Education**

In recent years, with the development of information technology, digital anti-fraud education has become a research hotspot. Many educational institutions and research teams have developed digital learning platforms and applications to disseminate anti-fraud knowledge to the public through online courses, video lectures, and interactive exercises. For example, some universities have developed dedicated anti-fraud education websites that offer scam case analyses, prevention techniques, and online tests to help students understand and recognize common fraud methods.

#### **2) Gamified Learning**

Gamified learning has also become an important direction in anti-fraud education in recent years. By integrating anti-fraud knowledge into games, students learn while being entertained, which enhances their interest and learning outcomes. For example, some educational institutions with development capabilities have created mobile games with anti-fraud themes. In these games, students, as players, need to complete various tasks to identify and prevent fraud, thereby improving their understanding and application of anti-fraud knowledge through gamified learning.

#### **3) Utilizing Social Media and Short Video Platforms**

With the proliferation of social media and short video platforms, some research and practices have begun exploring the use of these platforms for anti-fraud education. By posting anti-fraud knowledge videos, animations, and illustrated cases on social media, it is possible to quickly and widely disseminate anti-fraud information, which is particularly appealing to the younger generation. For example, local public security departments and anti-fraud organizations publish short anti-fraud videos on platforms like TikTok, Kuaishou, and Weibo to spread fraud prevention knowledge.

#### **4) Multidisciplinary Collaboration and Cross-Border Education**

To enhance the effectiveness of anti-fraud education, multidisciplinary collaboration involving law, psychology, and information technology is required. In recent years, some research teams have begun exploring interdisciplinary educational methods to enhance students' comprehensive anti-fraud capabilities through a combination of legal knowledge lectures, psychological prevention skills training, and information technology application guidance. For example, some universities have established comprehensive anti-fraud Curriculum, inviting legal experts, psychologists, and information security experts to co-teach, yielding significant results.

## **3. The Advantages of Immersive Anti-Fraud Education**

As online fraud techniques continue to evolve and diversify, traditional anti-fraud education methods can no longer effectively address the security challenges of the new era. Therefore, it is particularly important to explore more vivid, interactive, and effective educational models. Against this

backdrop, constructing immersive anti-fraud education will demonstrate significant advantages.

### **3.1. Enhanced Engagement**

Immersive anti-fraud education can make the learning process engaging and enjoyable by using technologies such as virtual reality (VR), interactive games, role-playing, and live-action simulations. These technologies can simulate real fraud scenarios, capture students' attention, and stimulate their interest in learning. In traditional educational methods, students often passively receive knowledge, resulting in low engagement. In contrast, immersive education allows students to actively participate in the learning process, acquiring knowledge through interaction. For instance, in immersive anti-fraud education, real-life fraud scenarios designed using VR technology enable students to experience fraud situations firsthand, make decisions and respond, thereby enhancing their sense of participation and interest in learning.

### **3.2. Improved Retention**

Immersive anti-fraud education uses realistic simulations and interactions to teach students in highly authentic scenarios. Unlike the monotony of passive listening, this learning method engages students through visual, auditory, and even tactile sensations, helping them retain anti-fraud knowledge more effectively through experience. For example, by effectively incorporating role-playing activities that students enjoy, they can play the roles of both fraudsters and victims, experiencing the fraud process and prevention methods firsthand. This direct experience helps them better retain the learned content. Additionally, using immediate feedback and reward mechanisms in interactive games helps reinforce students' memories and improve learning outcomes.

### **3.3. Personalized Learning**

Immersive anti-fraud education can provide personalized learning plans based on the different needs and learning progress of students. By analyzing students' learning behaviors, test scores, and real-life fraud cases, teachers can adjust the content and methods of instruction to ensure each student receives the most appropriate education. For instance, different difficulty levels of fraud scenarios and preventive measures can be designed for students of various age groups. For students who perform well, more challenging tasks can be provided, while those needing more assistance can receive additional practice and guidance. This personalized approach to education better meets the learning needs of students and enhances learning outcomes.

### **3.4. Practical Skills Development**

Immersive anti-fraud education emphasizes practical application by simulating fraud scenarios in virtual environments, allowing students to practice and apply their knowledge in realistic settings. For example, through live-action simulations, students can practice identifying and responding to scam calls in a simulated telecom fraud scenario. This hands-on practice significantly enhances students' ability to handle fraud in real life. Repeated simulations and drills help develop students' coping skills, judgment, and decision-making abilities, thus comprehensively improving their practical anti-fraud capabilities. Students not only master anti-fraud techniques but also remain calm and take appropriate preventive

measures when encountering actual fraud. Additionally, role-playing and interactive games offer ample practical opportunities, enabling students to enhance their hands-on skills through interaction.

It can be seen that compared to traditional anti-fraud education, immersive anti-fraud education offers a more vivid, realistic, and effective learning experience by utilizing advanced technology and interactive methods. This not only increases student engagement and learning outcomes but also helps them better grasp anti-fraud knowledge and improve their practical ability to deal with fraud. Therefore, constructing an immersive anti-fraud education curriculum is of great significance in enhancing students' awareness and ability to prevent fraud.

## **4. Implementation Methods of Immersive Anti-Fraud Education**

The key to implementing immersive anti-fraud education is to move beyond traditional lecturing methods, allowing students to be fully immersed and genuinely experience real fraud environments. To achieve this, a combination of advanced technologies, educational methods, and modern student characteristics can be employed. The following are several implementation ideas:

### **4.1. Implementation Using Virtual Reality Technology**

Virtual reality (VR) experiences use VR headsets and controllers to create highly realistic virtual environments that simulate common fraud scenarios, such as phone scams, online scams, and identity theft scams. In the virtual environment, students interact with virtual fraudsters and experience different fraud scenarios and their consequences through choices and decisions. This method not only provides an immersive learning experience, increasing students' awareness and engagement, but also enhances their interest and effectiveness in learning through interaction, allowing them to effectively master anti-fraud knowledge and skills in realistic scenarios.

### **4.2. Implementation Using Interactive Games**

Interactive games use devices such as computers, tablets, or smartphones to design game plots and tasks, integrating anti-fraud knowledge into the gameplay. Students learn anti-fraud skills by completing tasks, with the game providing immediate feedback and reward mechanisms to encourage continuous learning and improvement. This method combines education with entertainment, making the learning process more enjoyable and effectively stimulating students' interest in learning. Through continuous participation and challenges, it enhances the mastery and practical application of anti-fraud knowledge.

### **4.3. Implementation Using Role-Playing**

Role-playing involves writing detailed fraud scenario scripts and combining them with the popular "scripted murder mystery" entertainment style among students, allowing them to role-play in groups as fraudsters and victims to simulate interactive scenarios. Through active participation and dialogue, students can gain a deeper understanding of fraud techniques and preventive measures. After the role-playing exercise, organize discussions and reflections to summarize experiences and lessons learned. This method allows students

to learn within specific fraud scenarios, improving their response capabilities and enhancing their awareness of identifying and preventing fraudulent activities.

#### **4.4. Implementation Using Real-World Simulations**

Real-world simulations involve setting up mock fraud scenarios at irregular intervals on campus or specific locations, such as fake customer service booths or offices disguised as bank employees, allowing students to experience and identify fraudulent activities in a near-real environment. Teachers or experts provide on-site guidance, offering immediate feedback and analysis. This method has a strong sense of realism, enabling students to practice and apply anti-fraud techniques in real-life scenarios, gain practical experience, and enhance their ability to handle fraud effectively.

#### **4.5. Implementation Using an Anti-Fraud Simulation Platform**

For teachers and educational institutions with development capabilities, it is possible to use some open-source platforms to develop a comprehensive online anti-fraud platform that includes various simulated fraud scenarios and interactive modules, based on common fraud scenarios encountered by their students. Scenarios such as telecommunication fraud, phishing, and financial fraud can be included, allowing students to choose different scenarios for anti-fraud exercises at any time, while teachers can also schedule simulations irregularly. The platform provides immediate feedback and data analysis, helping students deepen their understanding of fraud techniques and awareness, while also offering teachers convenient management and guidance tools, thereby significantly enhancing the efficiency and effectiveness of anti-fraud education.

### **5. Design of an Immersive Anti-Fraud Education Curriculum**

To better enhance student engagement and learning outcomes, and to cultivate students' awareness and ability to respond to fraud. When implementing an immersive anti-fraud education curriculum, it is necessary to comprehensively consider aspects such as learning objectives, content design, technology application, teaching methods, assessment methods, and continuous improvement. The specific approaches for each aspect include:

#### **5.1. Setting Learning Objectives**

Setting learning objectives is the guiding principle in designing an immersive anti-fraud education curriculum. It involves determining the primary goals and expected outcomes of the course. Clearly defining anti-fraud education objectives can help teachers or curriculum designers better focus on the content, choose appropriate teaching methods, and establish evaluation standards, thereby ensuring the course's relevance and effectiveness. These objectives may include enhancing students' ability to identify fraud techniques, developing their response strategies, and strengthening their awareness of prevention. Based on students' age, background, and needs, suitable goals and learning priorities can be established to achieve the course's ultimate purpose.

#### **5.2. Content Design**

Content design is the foundation of an immersive anti-fraud education curriculum. It involves determining the core content and learning objectives of the course to ensure the teaching material is comprehensive and well-structured. In the content design stage, teachers need to select appropriate teaching materials based on the course objectives and students' needs, including common types of fraud, identifying fraud techniques, preventive measures, and post-incident remedies. Each module's teaching content and learning objectives should be designed to ensure the material is rich and engaging. The content of the anti-fraud education curriculum should be up-to-date and continuously revised, incorporating real cases and data. It should provide detailed fraud case analyses and preventive strategies, enabling students to deeply understand fraud techniques and prevention methods, thereby enhancing their anti-fraud awareness and capabilities.

#### **5.3. Technology Integration**

Technology application is the vehicle for implementing immersive education, mainly involving the selection and use of appropriate technological tools that align with the course content. For instance, selecting virtual reality (VR) and augmented reality (AR) to simulate fraud scenarios and provide interactive experiences. By developing immersive education software or applications, students can interact with virtual fraudsters in a virtual environment, enhancing their engagement and learning outcomes. Ensuring the reliability and usability of technological devices and platforms is crucial in technology application so that students can smoothly participate in the course, thereby achieving the intended learning objectives.

#### **5.4. Teaching Methods**

The selection of teaching methods is a key strategy in immersive anti-fraud education, including various interactive approaches such as virtual reality experiences and interactive learning, to help students deeply understand fraud techniques and preventive measures. Emphasizing student participation and interaction, encouraging them to actively think and discuss to enhance learning outcomes. By combining multiple teaching methods, educational goals can be better achieved, fostering students' anti-fraud awareness and coping skills.

#### **5.5. Assessment Methods**

Assessment methods aim to assess students' learning outcomes and the effectiveness of the course. Designing appropriate assessment methods, including classroom quizzes, project assignments, and simulation exercises, can comprehensively understand students' mastery of fraud knowledge and their practical application skills. Additionally, combining students' participation, grades, and feedback, the effectiveness of the course and students' learning outcomes can be assessed, enabling timely adjustments and optimization of course content and teaching methods to improve teaching effectiveness and learning experience.

#### **5.6. Continuous Improvement**

Continuous improvement emphasizes the ongoing evaluation and feedback of the course, making adjustments and optimizations based on the evaluation results. Regular course evaluations and feedback help to understand students' needs and reactions, identify course shortcomings, and

propose improvement suggestions in a timely manner. Teachers can adjust the course content based on evaluation results and actual anti-fraud needs, and continuously collaborate with relevant institutions to obtain fraud case materials and technical support. Continuously improving and optimizing course content and teaching methods helps maintain the course's relevance and effectiveness, thereby better achieving educational goals and enhancing students' learning outcomes and satisfaction.

## 6. Summary

Immersive anti-fraud education is an important educational task that can help students understand the dangers of online fraud and preventive measures, enhancing their cybersecurity awareness and preventive capabilities. While strengthening the implementation of immersive anti-fraud education, schools should continuously explore new teaching methods and models to improve the quality and effectiveness of education, providing strong support for students' growth and development. The immersive anti-fraud education presented in this article is an innovative teaching approach in the field of anti-fraud education that encourages students to actively participate in learning, increasing their interest and engagement. In the field of immersive anti-fraud education, future research can explore how to enhance immersion by integrating with blockchain, the metaverse, or current developments in artificial intelligence such as AIGC.

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