THE APPLICATION OF SMART CLASS WITH ARTIFICIAL

INTELLIGENCE FOR LEARNING ACHIEVEMENT OF

SITUATION AND POLICY COURSE OF YEAR 3

UNIVERSITY STUDENTS IN CHINA

BY

JIABEI TANG

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I love my country.

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Abstracts

This mixed methods study compared year 3 university students' Situation and Policy course achievement before and after using Smart Class with AI and investigated their satisfaction towards the use of Smart Class with AI in a Situation and Policy course in JiangXi Province, China. The sample group consisted of 20 year 3 university students from Nanchang Institute of Technology, China. Quantitative and qualitative data were collected through four lesson plans, pre-test, post-test, questionnaire and focus group interview. Quantitative data were analysed using means, standard deviations and paired sample t-test. Qualitative data were analysed using thematic analysis. Data collection lasted for four weeks and a teaching experiment.

The results of the pre-test and post-test showed that the students in the sample group significantly improved their learning achievement of Situation and Policy course. The questionnaire received high evaluation results, and most students felt satisfied. This study demonstrated that the use of Smart Class with AI provided an alternative and effective method for Situation and Policy course.

(Total 105 pages)

Keywords: Smart Class, AI, Situation and Policy

Students's Signature…………………………Thesis Advisor's Signature………………………………

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Chapter 1

Introduction

This chapter guides the reader to the topic of the thesis and serves as an overview of the overall research of the thesis. It begins with the background of the thesis research and the relevant research significance. Explained the importance of the research topic and its relevance to the current field. Clarify the research objectives of the thesis; Proposed research questions; Assumptions proposed by the research institute; The research framework of the thesis; Definition of terms and explanation of concepts; Defects or limitations of existing research. These contents are closely related to the research and would discussed in detail in subsequent chapters.

1.1 Background and Development of the Research

With the rapid development of AI technology, the reform and development of education has also emerged, the China proposed education informatization in 2000 and released the "Education Informatization 2.0 Action Plan".

Education is gradually changing from the traditional one-to-many teaching mode to personalized teaching, which means that education needs to better meet the learning needs of different students. Artificial intelligence, as a powerful tool, can provide teachers with precise teaching suggestions by analyzing students' learning behaviors, interests and abilities to help students better master knowledge.

Therefore, this study aims to explore the application of Smart Classroom with AI in teaching and learning, and to provide useful references for innovative development in the field of education. Education is gradually changing from the traditional one-to-many teaching mode to personalized teaching. Artificial intelligence, as a powerful tool, can provide teachers with precise teaching suggestions by analyzing students' learning behaviors, interests and abilities to help students better master knowledge.

Situation and Policy course is an ideological and political theory course which is compulsory for all students in Chinese colleges and universities, and it has an important mission in the ideological and political education of college students, and is the main course to educate college students about Situation and Policy, which has an important role in guiding students to correctly recognize the international and domestic situation, and to correctly understand the guidelines and policies of the Party and the country.

Situation and Policy course is a compulsory general education course for all majors in colleges and universities; it guides and helps students to master the basic theories and fundamental knowledge about Situation and Policy, to learn to observe and analyze international and domestic situations, and to understand and implement policies and guidelines by applying Marxist standpoints, viewpoints and methods.Students are trained to master the ability to correctly analyze the situation and understand policies, especially the ability to think, analyze and judge major events and sensitive issues at home and abroad, as well as hot, difficult and doubtful issues in society.

The course of Situation and Policy not only helps to improve students' academic literacy and thinking skills, but also enhances their understanding of society and the State, laying a solid foundation for future career development and social participation. At the same time, people with this knowledge play an important role in nation building, social governance and international cooperation. To help students gain a more comprehensive understanding of the national and international political, economic, and social situation. This includes understanding important topics such as national policies, international relations, and the global economy, providing students with a foundation for understanding the complex world landscape.

This course is an important course in Chinese universities, and from a professional point of view, the study of Situation and Policy course mainly includes the following aspects:

First, the Situation and Policy course needs to pay attention to the development of the international situation. Under the background of globalization, the connection

between countries is getting closer and closer, and the international situation has an important influence on China's development. Therefore, researchers majoring in education need to pay attention to the political, economic and cultural developments of countries around the world in order to better understand the impact of the international situation on our country. In addition, attention needs to be paid to the role of international organizations such as the United Nations and the World Trade Organization in international affairs, as well as the positions and attitudes of countries in these organizations.

Secondly, the Situation and Policy course needs to pay attention to the development of the domestic situation. On the domestic front, researchers majoring in education need to pay attention to the dynamics of the country's political, economic, and cultural developments, as well as the government's policy measures in these areas. For example, to study the policy orientation of the Chinese government in the fields of education, science and technology, and culture, as well as the impact of these policies on China's educational endeavors. At the same time, it is also necessary to pay attention to the development trend of hot social issues such as environmental protection, social security, and population aging, as well as the government's policy responses to these issues.

Moreover, the formulation and implementation of policies is a complex process involving the adjustment and weighing of the interests of multiple stakeholders. Therefore, researchers in the education program need to pay attention to the problems and challenges in the implementation of policies and how the government solves these problems by adjusting policies. In addition, attention needs to be paid to the effects of policy implementation, as well as the positive impacts and potential problems of the policies on education in China.

Finally, the Situation and Policy course needs to focus on the reform and development of education and teaching. As a course involving politics, economy and culture, the Situation and Policy course is of great significance in cultivating talents with international vision, innovative spirit and social responsibility. Therefore, researchers specializing in pedagogy need to pay attention to the development trend of education

and teaching reform, as well as how to combine the Situation and Policy course with education and teaching reform to improve the quality and effect of the course.

In short, the research of the Situation and Policy course covers many aspects such as international situation, domestic situation, policy implementation and effect, and education and teaching reform. Through the comprehensive study of these aspects, we can provide educators with teaching suggestions and reform directions about the Situation and Policy course, which will help to improve the development of China's education.

In terms of the purpose and significance of this course.Students will be able to better recognize the social environment in which they live and enhance their civic awareness and sense of social responsibility so that they can participate more actively in public affairs and social activities. Students are required to analyze political and social issues in depth, and develop critical thinking and problem-solving skills. This is important for engaging in various types of research and work in the future.

It helps students to understand the process of policy formulation and implementation, the decision-making mechanism of the government and the way of implementation. This is particularly important for students working in careers such as public administration and policy consulting. In the era of globalization, international affairs are increasingly interconnected. The study of Situation and Policy enables students to better understand issues such as international cooperation, conflict and governance, and helps them to become talents with a global perspective (Liu, 2020).

With the acceleration of globalization and social change, the discipline of Situation and Policy has become increasingly important. There is a growing demand from Governments, enterprises and non-governmental organizations for professionals with the ability to analyse policies and judge situations.

Moreover, it is a comprehensive discipline that involves knowledge from a number of disciplines such as political science, international relations, economics and sociology. It is often cross-fertilized with other disciplines in higher education to form

a more integrated and practical curriculum. With the rapid development of information technology, policy formulation and situation analysis increasingly rely on technical means such as big data, Artificial Intelligence and data science. The discipline of Situation and Policy is also increasingly focusing on data-driven research methods and skills development. Governments and enterprises need professionals to conduct policy research, risk assessment and strategic planning. Students studying Situation and Policy have better career prospects.

From the perspective of the relationship and development between Smart Classrooms and Artificial Intelligence. In recent years, technological advancements have revolutionized the education sector, introducing innovative tools and methodologies to enhance the learning experience. One such development is the concept of Smart Classrooms, which leverage the power of Artificial Intelligence (AI) to transform traditional learning environments into interactive and dynamic spaces. The relationship between Smart Class and AI is symbiotic, as AI plays a crucial role in the development and effectiveness of Smart Classrooms.

Smart Classrooms integrate modern technology and interactive content to create an engaging and immersive learning atmosphere. These classrooms are equipped with digital whiteboards, projectors, tablets, and other devices that facilitate dynamic presentations and collaborative learning. Students can interact with multimedia content, access educational resources online, and participate in real-time assessments and feedback. AI-powered educational tools can analyze and process vast amounts of data to provide personalized learning experiences for each student. Adaptive learning platforms powered by AI can identify individual strengths and weaknesses, allowing teachers to customize their approach and provide targeted support to students who require additional assistance. As students progress, AI algorithms continuously update and refine the content, ensuring that the learning materials remain relevant and challenging.

One of the essential features of AI in Smart Classrooms is natural language processing (NLP). NLP enables students to interact with AI-driven educational platforms using their voices or written inputs. These AI assistants can answer questions,

explain complex concepts in a simple manner, and even engage in meaningful conversations with students. This conversational interaction fosters a more interactive and dynamic learning environment, encouraging students to actively participate and ask questions without hesitation.

Moreover, AI facilitates automated grading and assessment processes in Smart Classrooms. Traditional manual grading can be time-consuming and subjective. AI-driven assessment tools, on the other hand, can efficiently evaluate assignments and exams, providing instant feedback to students and teachers. This immediate feedback loop helps students to understand their mistakes and improve their performance continuously.

Another critical aspect of Smart Classrooms enhanced by AI is data analytics. AI can analyze student performance and behavior patterns, providing valuable insights to educators and administrators. These insights can help identify at-risk students, monitor attendance, assess overall class engagement, and even optimize the school's curriculum and teaching methodologies. AI's data-driven approach allows for evidence-based decision-making, which ultimately benefits both students and educators.

Smart Class and the AI in education have revolutionized the traditional teaching methods. This transformative combination of technology and education is reshaping the educational landscape, offering numerous benefits and novel possibilities.It encompass a range of technological advancements that create an interactive learning environment. These classrooms are equipped with various digital tools which enable real-time collaboration, multimedia presentations and access to online educational resources. Smart Class facilitate engagement, interactivity, and personalized learning experiences, catering to diverse students needs and learning styles (Martin, 2019).

While the integration of Smart Class and AI in education holds immense potential, it also presents certain challenges and considerations. Privacy and data security concerns must be addressed to ensure the protection of students' personal information (Ilkka, 2018).

One of the significant advancements in Smart Class is the integration of AI technology. AI algorithms and machine learning techniques are applied to analyze vast amounts of educational data and provide adaptive and personalized learning experiences. AI can assist educators in assessing students' progress, identifying learning gaps and designing customized learning pathways to address individual needs. This individualized approach enhances students motivation, engagement and academic performance (Luckin, 2016).

Moreover, AI-based educational tools are transforming the assessment and evaluation processes. Smart grading systems employ AI algorithms to analyze and evaluate students' assignments, test, and essays, providing efficient and objective feedback. These systems can save educators significant time and effort, allowing them to focus on higher-order instructional tasks. AI is also being used in the development of educational content and resources. AI algorithms can generate interactive and adaptive educational materials, tailored to individual students' knowledge levels and progress. AI-powered content creation tools automate the process of generating educational content, such as quizzes, exercises, and simulations, which can be customized to suit different learning objectives and styles.

As the field of AI continues to advance, Smart Classrooms are likely to evolve further. Predictive analytics could be integrated into AI systems, enabling educators to anticipate student needs and challenges proactively. Virtual reality and augmented reality technologies could also be incorporated, offering immersive and interactive learning experiences that go beyond conventional classroom settings. However, the integration of AI in Smart Classrooms also raises certain concerns. Privacy and data security are paramount when dealing with sensitive student information. Educators and policymakers must ensure that AI systems in educational settings adhere to strict data protection regulations and ethical guidelines.

In conclusion, Smart Class and the application of AI in education are transforming traditional learning environments into dynamic, personalized, and data-driven spaces. These advancements offer enhanced engagement, adaptive learning experiences, and efficient assessment methods.

Moral and ethical issues in smart education also require attention. It is crucial to address ethical considerations and provide adequate support to educators to fully harness the potential of these technologies. By integrating Smart Class and AI, education can become more inclusive, effective, and aligned with the needs of the 21st-century learners.

1.2 Research Objectives

1.2.1 To compare the learning achievement in Situation and Policy course before and after applying Smart Class with AI by year 3 university students in China.

1.2.2 To investigate year 3 university students' satisfaction towards the application of Smart Class with AI in Situation and Policy course in China.

1.3 Research Questions

1.3.1 Would year 3 university students' achievement in Situation and Policy course improve after using Smart Class with AI?

1.3.2 What was the satisfaction of the year 3 university students towards the use of Smart Class with AI in Situation and Policy?

1.4 Research Hypothesis

1.4.1 Year 3 university students would improve their learning achievement in Situation and Policy course after applying Smart Class.

1.4.2 Year 3 university students would have a positive satisfaction after applying Smart Class in Situation and Policy.

1.5 Scope of the Study

This study was conducted in the context described below; Therefore, the content would describe with caution and specificity.

1.5.1 Location of the study

This research was conducted at Nanchang Institute of Technology (Higher education). The school was located at 289 Tianxiang Avenue, Nanchang, Jiangxi Province. There were nearly 20,000 undergraduate and graduate students (Figure 1.1).

Figure 1.1 Location of the Research School
Source: Baidubaike, 2017
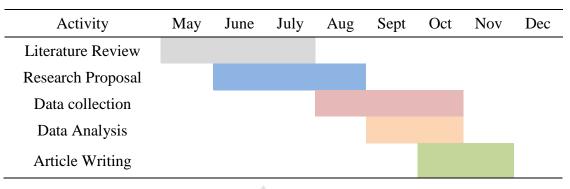
1.5.2 Research Sample

Nanchang Institute of Technology has a nationwide enrollment of students from different parts of China. Nearly 60 majors were offered; more than 19,000 students were enrolled. The study population was selected from year 3 undergraduate students currently studying at the school. This study selected 20 students as a sample group.

1.5.3 Time frame

The total duration of this study was expected 7-8 months, starting from the first semester of 2023 academic year. It mainly included five aspects of content division: Literature Review; Research Proposal; Data collection; Data Analysis; Article Writing. As shown in Table 1.1.

Table 1.1 Time frame of the study

Activity	May	June	July	Aug	Sept	Oct	Nov	Dec
Literature Review								
Research Proposal								
Data collection								
Data Analysis								
Article Writing								

1.5.4 Content of the study

This study was taken place during the first semester of 2023 academic year.It took a four-week lessons in 2023. There were a total of 8 lessons period of 45 minutes each. Two lessons period were held during a week. (Table 1.2).

Table 1.2 Content of the study

Lesson Plans	Topics	Smart Class and AI
Plan 1	Session1: Domestic Economy Session2: International Economic	Intelligent Question and Answer System
Plan 2	Session3: Domestic Political Session4: International Political	Intelligent Human-Computer Interaction
Plan 3	Session5: Domestic Military Session6: International Military	Intelligent Personal Learning
Plan 4	Session7: Domestic Culture Session8: International Culture	Intelligent Personal Assessment

1.6 Conceptual Framework

There was a relationship between independent variables and dependent variables in this research. The Smart Class teaching model was based on AI and Big data, and then through the Smart Class teaching model, it affected three aspects of learning interest, learning achievements and learning satisfaction.
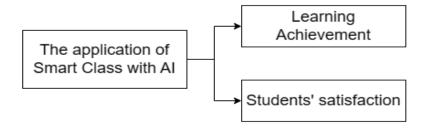
Figure 1.2 Relationship of variables

The main application methods of Smart Class with AI in classroom teaching were the following steps:

Step1: Using smart hardware for digital learning of course knowledge.

Step2: Using intelligent Q&A systems to solve problem and deep learning.

Step3: Using human-computer interaction and AI evaluation analysis to customize personal learning and provide suggestions.

1.7 Definition of Terms

AI (Artificial Intelligence) is a branch of computer science that deals with the development of intelligent machines and systems capable of performing tasks that require human intelligence. It involves creating programs and algorithms that can process information, learn from experience, and make decisions or predictions. AI encompasses various techniques such as machine learning, natural language processing, to simulate human intelligence in machines.

Smart Class with AI refers to an educational setup where AI technology is integrated into the classroom to enhance the learning experience. It can involve the use of AI-powered tools, devices, or software to assist teachers and students, personalize learning for education.This is an educational environment that integrates Artificial Intelligence technology to enhance pedagogical practices. Through AI-powered tools and software can provide personalized learning experiences by analyzing individual student data and adapting content accordingly.

Including but not limited to the following teaching methods: AI intelligent question and answer, AI online query, student learning behavior analysis, providing personalized suggestions and solving classroom content in real time, etc.

Year 3 university students The third year undergraduate students from Nanchang Institute of Technology were representative and have certain learning ability and adaptability. They all need to study the subject of Situation and Policy.

Situation and Policy course Situation and Policy is a compulsory course for universities, mainly analyzing and explaining the real-time situation and policies of China and the international community.

Learning achievement Learning achievement refers to the level of knowledge, skills, or understanding that a learner has acquired as a result of completing a course or educational program. It represents the measurable outcomes or accomplishments that demonstrate the learner's mastery of the course material and their ability to apply that knowledge effectively. Measured by pre-test and post-test.

Student satisfaction Learning satisfaction refers to an individual's approach, mindset, and disposition towards the process of learning. It encompasses their willingness, openness, and enthusiasm to engage in learning activities, adapt to new information, overcome challenges, and actively participate in the learning process. A positive learning satisfaction involves being motivated, curious, and persistent. Measured by focus group interview.

1.8 Limitations

1.8.1 This study only included the course of Situation and Policy, and the credits for this course were relatively small. Therefore, generalizing the result of this study to other courses was not reliable.

1.8.2 Participated in this study only year 3 university students from Nanchang Institute of Technology, and the sample had a great particularity and limitations. Therefore, generalizing the result of this study to other groups was not reliable.

1.9 Significance of the Research

1.9.1 This study effectively explored the impact of an AI-based Smart Class on year 3 university students in the course Situation and Policy.

1.9.2 This study provided a research foundation for AI-based Smart Class teaching model and provides assistance for subsequent research and development.

1.9.3 This study helped year 3 university students better learn Situation and policies.

Chapter 2

Literature Review

This chapter is a critical summary and evaluation of existing published research and academic articles on a specific topic. It helps to identify gaps, trends, and key findings in the field, providing a foundation for this study. It also providing a foundation for generating new ideas, hypotheses, or theories and ensuring the research is informed by the existing body of knowledge.

2.1 General Education of Tertiary Level in China

Higher education general education courses were a kind of universal courses established to cultivate students' comprehensive qualities and improve their comprehensive abilities. Higher education general courses play an important role in Chinese university education, aiming enhancing their comprehensive ability. The year 3 students in colleges and universities also have some characteristics in the study of general education courses. For this group, they were more familiar with the study life in colleges and universities, and their own learning ability and interest were more stable. They have certain insights into the development and progress of the times, and can make good use of the intelligent hardware and software that were currently popularized in the development of science and technology (Shousong, 2003).

This also helps to broaden the range of subjects and learning styles of students, providing them with broader choices for their future development. Generally speaking, university general education programs were designed to cover a wide range of subject areas, including but not limited to:

Culture and History: The Liberal Studies curriculum may cover Chinese and world history, literature, art, philosophy, etc. to help students understand the evolution and development of human civilization.

Natural Sciences: covers natural sciences such as physics, chemistry, and biology to help students understand the basic principles and methods of science.

Innovation and Entrepreneurship: Courses in this area may cover innovative thinking, entrepreneurial concepts, business models, etc. to encourage students to be innovative and entrepreneurial.

Social sciences: covers fields such as psychology, economics, and sociology to give students a deeper understanding of society and human behavior.

Information Technology: Due to the advent of the digital age, courses in information technology are becoming an important part of general education, helping students to master the basic applications of information technology.

Foreign Languages: English is usually a compulsory foreign language course to develop students' cross-cultural communication and global perspective.

Situation and Policy: Educating students on Situation and Policy can help them recognize the situation at home and abroad, and it is a comprehensive content that pays close attention to the combination of theoretical teaching and social reality.

China's higher education has explored the theory of liberal education and has drawn on it when transforming poorer majors, but it has not intentionally advocated or systematically practiced liberal education. In recent years, quality education has been widely discussed and practiced in mainland higher education circles. It is both similar to and different from general education in Europe and America. Liberal education is the transcendence of liberal education, so it has both inheritance and abandonment and development. Liberal education has inherited liberal education's emphasis on the development of human nature (Maoyuan, 2002; WenLi, 2007).

Clarify general education goals: strive to maintain a balance between non-professional and professional education balance between non-professional and professional education. Overcome the narrowness of specialized education and create people with a broad vision, integration, liberal spirit and beautiful sentiments.

Through the categorization of compulsory subjects: students are guaranteed a general grasp of the cultural heritage of mankind. The division of disciplines and specializations leads to difficulties in communication between disciplines and specializations.Promoting the internalization of knowledge: Liberal education combines knowledge and methodology, cognitive education and value education, and highlights methodological and value education and focuses on students' reading, reflection and discussion, with a particular emphasis on discussion rather than indoctrination in value education.

Compulsory courses are mainly composed of two parts: the courses set by the Ministry of Education, and the compulsory courses set by the schools themselves. These courses are required to be taken by all students, and these courses are responsible for educating students on ideology and improving their political quality (Huichun, L 2007).

2.2 Situation and Policy Course

Mr. Chen proposes an integration reform of teaching and research about the Situation and Policy course in Chinese colleges and universities. The reform aims to renew the teaching idea in the Big Data era, adopt new teaching methods by constructing and utilizing a network platform of teaching and research, establish a teaching model under the dual parallel paths from online to offline, and form a teaching model with multiple combinations of classroom teaching, network courses and scientific research. The core component of the scheme is the network platform of teaching and research, which can provide the services of online learning and teaching, full range of teaching and scientific research, providing the latest information and updating knowledge systematically. The researcher concludes that the integration reform of teaching and research can ensure teaching quality, improve teaching connotation, strengthen research ability, and enhance the capability of colleges and universities (Fan, 2016).

Some researchers aim to analyze and reflect on the teaching evaluation of the Situation and Policy course and summarize its basic characteristics. 1) Unification of knowledge evaluation and value evaluation. 2) Internal evaluation and external evaluation. 3) Realistic evaluation and expected evaluation. 4) Individual evaluation and

collective evaluation.They emphasizes that understanding these basic characteristics is essential for constructing a scientific teaching evaluation system for the Situation and Policy course (Ma, 2019).

The research hotspots of curriculum reform of Situation and Policy mainly include five aspects: teaching effectiveness, classroom teaching, teaching mode, practical teaching, and standardization construction. Among them, the teaching effectiveness and practical teaching are the focus and frontier of curriculum reform of Situation and Policy. The curriculum reform of Situation and Policy should realize the transformation and displacement from the parallel course to the leading course, the normal course to the pioneering course, and the ideological and political course to the ideological and political theories teaching in all courses in the construction of ideological and political theory course system in colleges and universities. The inheritance and innovation of Situation and Policy in the new era should be promoted in the practice process. Therefore, the researcher concludes that the curriculum reform of Situation and Policy should focus on teaching effectiveness and practical teaching, and promote the inheritance and innovation of Situation and Policy in the new era (Chen, 2019).

The research concludes that improving the effectiveness of teaching the Situation and Policy course is necessary for teaching reform in science and engineering universities. The course should be tailored to the characteristics of students in polytechnic colleges and universities, with emphasis on perceptual thinking, emotional intelligence training, and humanistic quality education. The paper suggests constructing a high-quality teachers' team, developing scientific teaching content and methods, and promoting the unity of science and practice in teaching the course. The ultimate goal is to motivate students to learn and grow healthily for the construction of socialism with Chinese characteristics (Xue-zhe, 2019).

The research discusses the need for teaching courses on China's domestic and international situation and development trends to help students develop a correct worldview and values. However, the study also highlights several issues with the current teaching methods and content, such as the lack of timeliness, traditional teaching

methods, and inadequate teacher training. The study suggests analyzing the reasons for these issues and developing targeted solutions to improve the teaching of these courses.so the study concludes that there is a need for reform in the teaching of courses on China's domestic and international situation and development trends (Guo, 2020).

2.3 Smart Class and Traditional Class

Table 2.1 The difference between Teaching model

Difference	Smart Class with AI	Traditional Class
Environment	Advanced intelligent hardware equipment and software.	Just blackboard, chalk and other traditional supplies.
Method	Diversified, intelligent and interesting.	Lectures, demonstrations and simple discussions.
Content	Access a wealth of knowledge content from the Internet and AI.	Textbooks and campus libraries.
Interactivity	A lot of interactive content, and multiple aspects of content interact together.	Simple interaction between teachers, students and classmates.
Feedback	Real-time feedback on teaching quality.	Feedback after class is relatively lagging behind.
Requirement	Teachers and students need to be able to use smart products smoothly.	Lower requirements, convenient and fast.

Source: Baidubaike, 2020

Suping Yi and others compare the teaching behaviors in traditional classrooms and Smart Class in China. The study analyzes the teaching behaviors in classrooms from six dimensions: resource sharing, teacher lecturing, teacher-students interaction, group cooperation, autonomous learning, and evaluation feedback. The analysis results show that there are significant differences in teacher-students interaction, group cooperation, autonomous learning, and evaluation feedback in the Smart Class and the traditional classroom.

However, there is no significant difference in data analysis between resource sharing and teacher teaching. The study proposes a set of methods to analyze classroom teaching behavior, with data analysis as the main method, supplemented by video observation. The study can objectively and accurately reflect the differences and facts of teaching activities between traditional classroom and Smart Class, which is conducive to teachers' continuous reflection and improvement of teaching in combination with their own actual conditions, thus contributing to their own professional development (Yi, 2021).

Xing Wang and others conclude that the use of Smart Class in English teaching has been effective in improving vocabulary memory, reading comprehension, and critical thinking skills. The practical case study presented in the paper shows that students can better integrate vocabulary into real language use and have stronger memory through repeated exercises and contextual memory.

The use of pre-class preparation, in-class analysis and explanation, and after-class evaluation helps students understand the article more independently, leading to a comprehensive understanding of the article. The integration of writing or oral practice can also help cultivate English listening, speaking, reading, and writing skills. Finally, group discussion and sharing of media resources can guide students to think dialectically from different perspectives and gradually cultivate critical thinking (Wang, 2019).

After conducting a study on the comparison between traditional and Smart Class in relation to creativity and academic achievement.The first one is a significant and positive correlation between creativity and academic achievement of secondary level students.The secend is no significant difference between the academic achievements of secondary level students when no instructions to both groups are provided (Shanwal, 2017).

Huiju Yu aimed to investigate the differences in interaction and engagement between a Smart Class and a traditional classroom. The study was conducted by one experienced English teacher lecturing in both classrooms for one semester, and the research data were obtained by coding the class videos with the proposed "Classroom

Interaction Analysis Framework" and the adapted engagement questionnaire.The results showed that there were no significant differences in either interpersonal interaction or human-technology interaction; however, students experienced significantly more engagement in the Smart Class. Based on the results, interaction patterns and an interaction model in a Smart Class are proposed for promoting interaction by integrating technology, pedagogy, and space. The study was only a pilot study on classroom interaction, and the sample could be enlarged, and a sophisticated data analysis method could be adopted in the future (Yu, 2022).

The study discusses the research trends and hotspots in the field of intelligent education and Smart Classrooms under the application of Artificial Intelligence. YaoWen analyzed the knowledge graph of domestic and foreign literature from 2001 to 2020. The paper also discusses the evolution of the "projection and visualization" content of middle school mathematics teaching in China since the reform and opening up, and the teaching based on the STEAM education concept. The video research of high-quality open courses in Shanghai in 2006 and 2016 is also discussed. However, the study does not provide any specific conclusions (Yaowen, 2022).

Takawale and others focus on finding the effectiveness of Smart Class over traditional classrooms in terms of academic performance of students. The study was conducted on two groups of 20 students each, where Group A was taught through traditional methods and Group B was taught through smart boards. The study found that the academic performance of students in Group B was better than that of Group A.

The use of smart boards in classrooms provides access to online information and tools, offers flexibility in presenting information, and is environmentally friendly. The paper concludes that the use of smart boards in classrooms can improve the academic performance of students (Takawale, 2016).

These talk the development and current state of Smart Classrooms in China, exploring the differences between traditional classrooms and Smart Classrooms from both theoretical and practical perspectives. Yang, Z defines Smart Classrooms as open and interactive classrooms where each student has an intelligent learning terminal with

access to rich resources and seamless cloud platform integration. It highlights the scientific, flexible, creative, and practical aspects of Smart Classrooms. However, the study does not provide any specific conclusions or recommendations (Yang, 2020).

2.4 The Application of Technology and Digital in Education

Kim and others propose an ambient intelligence methoed for a Smart Class that measures the level of students engagement in real-time by evaluating their psychological states using thermal infrared imaging. The methoed provides quantitative indices of the learner's level of immersion in real-time, allowing teachers to get feedback. The application changes color in real-time according to the concentration levels of the students in class. The methoed provides an innovative way to apply the Internet of Things to the education fields and provides a basis for future research (Kim, 2019).

Gupta proposes a novel method for analyzing students' affective content in a Smart Class environment using their facial expressions. The proposed method includes analyzing four different moods of students, namely High Positive Affect, Low Positive Affect, High Negative Affect, and Low Negative Affect. The engagement scores are calculated based on the four moods of students as predicted by the proposed method. The paper concludes that the proposed Smart Class system was tested for more than 100 students of four different Information Technology courses and the corresponding faculty members, and it can be used to improve the teaching strategy and hence improving the students' learning rate (Gupta, 2019).

The research concludes that the use of smartphones and mobile applications can help in intelligent teaching of general education curriculum in universities in China. The study shows that intelligent teaching of smart phone-enabled generalized courses can effectively help teachers conduct teaching decisions and teaching interactions based on analysis of students' learning behaviors. The teaching effect is positive and is supported by students. The study has shown that the use of digital learning as a test bed for general education can help address the problems of large differences in students, less interaction in the classroom, and increasingly taking up the attention of students in the classroom (Lu, 2018).

Lewis, C and groupes use The Unified Theory of Acceptance and Use of Technology to examine the adoption of established and emerging information technology in higher education classrooms. They found that the most important antecedents for instructors' use of technology in the classroom are performance expectancy, effort expectancy, social influence, and habit, with more complex effects when gender is added as an interaction term. So that researchers believe gender is also a factor (Lewis, 2013).

Okas proposes that integrating technology into face-to-face instruction can significantly benefit learning quality and increase students' access to information. Blending technology with face-to-face instruction can stimulate learning and provide more collaborative learning experiences. Instructors should choose appropriate tools depending on the learning objectives to provide students with the knowledge and skills needed for discovery and experimentation (Okas, 2015).

Bautista and others concludes that traditional classroom structures and arrangements do not meet the present and future needs of education. Therefore, the researchers propose the concept of Smart Class, which are new learning spaces that better fit the changing educational needs and roles. Smart Class are designed to be flexible, comfortable, socially and digitally connective, personalized, and safe for users and technological equipment (Bautista, 2013).

Hashim concludes that technology plays a significant role in education in the digital era, and teachers need to be prepared to teach using software, hardware, digital, technological, and social media. The integration of continuous grading, instant feedback, clear goals, rewards, challenges, and positive reinforcement are the new nature of education in the digital era. The research also emphasizes the need to promote technology in the classroom and take advantage of increased use of social media, open educational resources, and the rise of data-driven learning and assessment. The current education system needs to be redesigned to meet the challenges of the digital era, and teachers, administrators, educational policy-makers, and the ministry of education need to revisit the current education system (Hashim, 2018).

Zehui and other concludes that Smart Class have a positive impact on teacher-students interaction in higher education. The study found that Smart Class triggered more self-initiated students actions and students-driven teacher talk, while teacher-initiated talk decreased significantly, indicating that students' autonomy was strengthened in the Smart Class. Furthermore, teachers' workload was somewhat reduced, and they obtained more support with trying new pedagogies with mobile terminals in the data-rich environment. The paper recommends that teachers provide guidance to support students in Smart Class, instructional designers should consider more course activities and collect students' feedback during the course via smart terminals, and universities should provide training to help teachers improve their technological, pedagogical and content knowledge, become acquainted with SC infrastructure and provide technical support during class (Zehui, 2021).

The researcher concludes that technology has had a positive impact on education, making it easier for teachers to impart knowledge and for students to acquire it. However, Under the influence of current educational technology，it also acknowledges that technology can have negative effects and suggests that teachers and students should work to eliminate these drawbacks. In order to better avoid the impact of adverse effects，He recommends that every country should introduce a more technologically equipped education sector in the future (Raja, 2018).

Students have varying levels of competence in digital technology, and their frequency of use depends on the purpose or task for which they use them.Social networks and WhatsApp are the most important applications for students, as they enable communication and socialization with others, regardless of physical location.College students now own devices such as smartphones and computers.The positive attitude of students towards social networks and their vast communicative, social, and academic potential can be leveraged by universities to rethink their educational model and methodologies.Technologies have advantages for collaborative work and teaching and learning, thanks to their potential for use almost anywhere and at any time and the integration of functions that offer educational, social, and technological potential (Echenique, 2015).

Lai (2011) discusses the changing needs of 21st century learners in higher education and how digital technologies can support a shift in cultural practices in teaching and learning. He suggests that the use of digital technologies can improve the quality of learning experiences if they are used as a participatory communicative tool to support collaboration and co-construction of knowledge. Learners should also be aware of their own learning characteristics in informal settings and adapt them in formal settings. The research emphasizes the blending of formal and informal learning strategies in higher education to prepare students as lifelong learners and innovative knowledge creators in the knowledge society.

Wikramanayake (2005) concludes that the introduction of computers in educational institutes has been high in the last five years. Educators need to be made aware of the available technology and take initiatives to implement them to bring about some forms of reforms. The world is flooded with information, and people who have developed their skills to find problem-relevant information and interpret and apply them in solving problems will use them effectively.

Sum up, The application of technology and digital tools in education has revolutionized the learning landscape, empowering both educators and learners with unprecedented opportunities. In the contemporary world, classrooms are no longer confined to physical spaces, as virtual learning environments, online courses, and interactive multimedia have become integral to the educational experience. Technology has streamlined administrative tasks, enabling schools and institutions to efficiently manage student records, schedules, and communication. Moreover, digital platforms have democratized education, breaking down barriers of access and bringing quality learning resources to individuals across the globe. From interactive e-books to educational apps and gamified learning platforms, technology has made learning more engaging and personalized, catering to diverse learning styles. Additionally, collaboration and communication among students and educators have been enhanced through online forums, video conferencing, and instant messaging tools. Artificial Intelligence (AI) has also made its mark in education, offering personalized learning paths, automated assessment, and data-driven insights to optimize the learning process.

While technology has undoubtedly revolutionized education, it is essential to address issues of equitable access and digital literacy to ensure that all learners can benefit from these advancements. As technology continues to evolve, embracing its potential in education holds the promise of fostering a generation of digitally adept individuals, equipped with the skills and knowledge to thrive in an increasingly interconnected and fast-paced world (Ng, 2015).

2.5 The Application of Smart Class

Yuliantoputri (2019) proposed Smart Class service system enables developers to build their own comprehensive and integrated Smart Class with flexibility to choose many alternatives of technology to fulfill each service.By using the service computing system framework, the design can be done more structured and detailed, especially by creating the artifact properly. The future work of the Smart Class service system is the development and deployment.

The researcher presents an ontology of Smart Class systems that helps to understand and analyze current Smart Class systems, and identify features activities of the next generation Smart Class systems. The ontology base on Systems Thinking approach.It also describes the evolution and improvement of the concept of Smart Class over the years and presents examples of infrastructure for Smart Class. But he does not provide any specific conclusions (Uskov, 2015).

Yang (2020) discusses the concept of a "Smart Class" and its features, as well as practical implementation of educational technology. It provides an overview of research on Smart Class from different countries and perspectives. The introduction of the paper highlights the importance of smart education in real learning scenarios and the need for enhanced information access and operations automation in Smart Class.

The researcher concluded that there is a significant relationship between college students' information literacy and their preferences for Smart Class learning environments. The study found that students' information literacy significantly predicts their Smart Class learning environments, which includes preferences for students

negotiation, inquiry learning, reflective thinking, ease of use, perceived usefulness, multiple sources, connectedness, and functional design.They also suggest that institutions and educators should consider students' information literacy and learning environments when designing, constructing, and evaluating Smart Class learning environments (Yu, 2022).

Huiping Hu and others advocate for the construction of Smart Class in vocational colleges . They suggest using information technology to improve teaching levels by online and offline learning. The research emphasizes the need for a students-centered and outcome-oriented education process. They suggests various classroom layouts, such as round table discussions and U-shaped classroom designs, to facilitate interaction and participation among students and teachers. The research also recommend the use of flipped classrooms, mixed teaching, and small class teaching to improve the teaching quality and effectiveness. They highlights the importance of building an interactive, intelligent, open, and diversified intelligent teaching environment to realize the two-way promotion of teaching space and educational concepts, models, and teaching methods (Hu, 2021).

Huang and others propose an architecture for building and running context-aware Smart Class in smart campuses.The result shows that, in terms of technology, the proposed architecture is feasible for building context-aware Smart Class in smart campuses. In conclusion, the research provides a feasible architecture for building and maintaining Smart Class at the university campus (Huang, 2019).

Song and others conclude that classrooms have evolved from the multimedia period to the internet period and will eventually move to the smart technology period. A Smart Class is equipped with smart application services and other software and hardware, allowing teachers to teach using a wide variety of media. The ultimate mission of a Smart Class is to provide smart application services to optimize teaching effects. The application of smart technologies, the provision of smart services, and the implementation of smart management are the main distinguishing features of a Smart Class from multimedia and network classrooms. The smartness of a Smart Class should be implemented to support teaching activities more intelligently (Shuqiang, 2014).

Saini (2019) provides a consolidated review of interdisciplinary works on Smart Class, which employ software and hardware to support instructors and students in the process of knowledge transfer. The review covers different techniques and technologies used in Smart Class to facilitate an efficient and effective learning environment, including smart content, smart engagement, smart assessment, and smart physical environment.   They think that there are new research opportunities and challenges that need to be addressed for the synergistic integration of interdisciplinary works.

The researcher discusses the problems with traditional university classroom teaching and the benefits of using Smart Class for teaching innovation. They argue that Smart Class, with their rich resources, extensive interaction, and combination of virtual and reality, provide a new field for teaching. They provides examples of how Smart Class can use for collaborative learning, game-based learning, role-playing, skill operation, remote live broadcasting. They suggest that the utilization of Smart Class enables teachers and students to flexibly combine, use, and innovate various teaching organization forms, and jointly create new modes of classroom education and teaching to serve the cultivation of creative talents. The paper concludes that Smart Class have provided extensive and effective support for teaching innovation (Xie, 2018).

The research concludes that the configuration of Internet access and digital resources for each student in the classroom is vital for improving the learning experience. The study also found that students did not perceive much smart learning even in tablet classrooms, which implies that pedagogy fit is the key issue for the application of Smart Classrooms. The study suggests that technology equipment plus advanced pedagogy could lead to the transformation of teaching and learning modes. The display of students' learning results played an essential role in the student's perception of classroom climate. The study recommends future research to investigate how to match technologies, pedagogies, and Smart Classrooms to improve student's achievements (Yang, 2018).

The research discusses the possibility of using IoT to build a Smart Classroom that enables real-time, automatic feedback on the quality of a lecture and the level of satisfaction of the class with the lecture and the lecturer. The real-time feedback will

allow the teacher to adapt the class during the presentation. The integration of IoT technology with social and behavioral analysis can transform a standard classroom into a Smart Classroom that actively listens and analyzes the voices, conversations, movements, behavior, etc., in order to come to a conclusion about the lecturers' presentation and listeners' gratification. The recent research conducted at MIT shows that it is possible to combine computer and social science to analyze human behavior. Therefore, the paper concludes that the use of IoT technology in the classroom can make the overall learning process shorter, more efficient, and more pleasant and even entertaining (Temkar, 2016).

Some groups discuss the application of IoT in Smart Classrooms and proposes an innovative approach to providing real-time feedback on lecture quality. The main contribution of the research is the multidisciplinary research subject and the understanding of the problem statement . The focuses on the use of sensing and monitoring technology to explore students' behavior in an intelligent environment. The collected information can provide insight into the activity level by correlating sound and movement's existence and intensity. The proposed intelligent environment could actively observe student response to a lesson and be useful to a lesson to increase the lecture quality. The practical examination of the Smart Classroom subject will present new issues for research and consideration (Gligorić, 2012).

From the research of some scholars above all. There have been many similar studies in this direction The application of Smart Class in education has revolutionized the traditional teaching approach by integrating cutting-edge technology into classrooms, creating an immersive and interactive learning environment. Smart Class leverages digital tools such as interactive whiteboards, projectors, tablets, and educational software to engage students in a dynamic and personalized learning experience. By incorporating multimedia elements like videos, animations, and simulations, complex concepts become visually comprehensible, stimulating students' curiosity and enhancing their understanding of subjects.

Moreover, Smart Class facilitates real-time communication and collaboration among students and teachers, enabling seamless exchange of ideas and feedback. With

access to a vast repository of online resources, students can explore beyond the confines of textbooks, fostering self-directed learning and nurturing critical thinking skills. The integration of Smart Class technology also enables educators to monitor individual progress, identify learning gaps, and customize teaching strategies accordingly, promoting inclusive education. Additionally, Smart Class empowers teachers with tools for innovative assessments and data-driven decision-making, optimizing their instructional practices.

As a result, students experience heightened motivation, active participation, and improved academic performance. The application of Smart Class in education not only augments the learning process but also prepares students to thrive in the digital age by honing their technological competencies. To enable them to become capable of mastering self-learning and further development (Zhang, 2019).

2.6 The Application of Artificial Intelligence

Popenici concludes that the emergence of Artificial Intelligence in teaching and learning in higher education requires a serious debate about its future role. The fast pace of technology innovation and job displacement implies that teaching in higher education requires a reconsideration of teachers' role and pedagogies. These issues deserve special attention as universities should include this set of risks when thinking about a sustainable future (Popenici, 2017).

The researcher discussed the importance of innovation and the development of new ways of doing things, rather than relying on the norm. They aimed to assess the impact of Artificial Intelligence (AI) on education. The study found that AI has extensively been adopted and used in education, particularly by education institutions, in different forms. AI has been used in administration, instruction, and learning. The study found that the use of AI in education has led to the customization and personalization of curriculum and content in line with students' needs, which has fostered uptake and retention, thereby improving learners' experience and overall quality of learning. The study concluded that AI has a major impact on the education sector. (Chen, 2020).

Holmes (2023) discusses the ethical obligations of private organizations and public authorities involved in AI education research, as well as the impact of AI education on students goals, interests, and emotions. The authors suggest that while AI education has the potential to revolutionize education by providing personalized learning experiences, it also raises significant ethical questions that must be addressed. They propose a future where AI technology supports and enhances the work of human educators. Overall, the paper emphasizes the need for critical engagement with AI education and careful consideration of its potential benefits and drawbacks.

The conclusion of Kumar is that an AI-based smart learning system can be created by combining various AI techniques with other technologies to create a personalized teaching-learning environment. The system includes features like recognition, pattern matching, decision making, reasoning, problem solving, and more. The system also uses a knowledge-based system and supervised machine learning for qualitative assessment of students performance. Future work involves implementing a lecturebot prototype with multiple features and capabilities to provide a complete learning experience (Kumar, 2019).

The researcher discusses the use of AI in education, particularly in the development of intelligent tutoring systems that can adapt and tailor instruction to the individual needs of the students. They highlight the potential of AI-based learning technologies to improve teacher effectiveness, students engagement. The research also presents various examples of intelligent game-based learning environments that have demonstrated remarkable progress in achieving the two-sigma effect of a human tutor. It suggest that the contributions of AI to education are perhaps more profound than previously believed. they concludes that AI has the potential to revolutionize education and improve learning outcomes for students (Chaudhri, 2013).

Yu (2012) explores the use of mobile or smart phones as a potentially powerful learning tool in higher education. He highlights the growing trend of mobile phone use and the increasing capabilities of smart phones. They found that mobile phones have replaced computers as the primary wireless Internet access. He concludes that educators must strive to embrace smart phones as powerful new learning tools.

The research reviews the potential of robots in education as tutors or peer learners. The authors discuss the technical challenges and consider how the robot's appearance and behavior affect learning outcomes. They highlights that robots have been shown to be effective at increasing cognitive and affective outcomes and have achieved outcomes similar to those of human tutoring on restricted tasks. The positive learning outcomes are driven by the physical presence of the robot, and the question remains of what exactly it is about the robot's appearance that promotes learning. The research concludes that robots have great potential in education, but more research is needed to understand how to design and use them effectively (Belpaeme, 2018).

Zawacki (2019) did a research highlight the dominance of US-American, Chinese, Taiwanese, and Turkish authors from Computer Science and STEM departments in the field of AIEd research. The study provides an overview of potential AI applications in higher education to support students, faculty members, and administrators, which were described in four broad areas with 17 sub-categories. They also reflects on the lack of critical reflection of challenges and risks of AIEd, the weak connection to theoretical pedagogical perspectives, and the need for further exploration of ethical and educational approaches in the application of AIEd in higher education.

The research discusses the application of Artificial Intelligence in education and its impact on the modern education system. Lufeng, H analyzes the innovation progress of the combination of Artificial Intelligence technology and contemporary education, clarifying the role of Artificial Intelligence in helping modern education system. He concludes that the application of Artificial Intelligence in education is of great significance for the construction of innovative, intelligent, and futuristic education mode, and has a promoting effect and far-reaching application value for the development of the education system in China (Han, 2018).

The researcher think leaders need to focus on providing good education and developing skills for learning students. They emphasizes the importance of leadership styles in higher education and the challenges faced in developing them in five selected countries. The authors think that the research will contribute to the diffusion of new trends in distance education and e-learning around the world (Halili, 2019).

The study concludes that Artificial Intelligence technology has been applied in various aspects of education, including promoting education innovation, assisting teaching and learning processes, managing smart campus life, and providing useful information to stakeholders. The use of Artificial Intelligence technology in education is essential in the 21st century to ensure effective teaching and learning processes among teachers and students. The study suggests that to better promote the application of Artificial Intelligence in education, three important aspects must be considered: the technical level, the model level, and the practical level (Yufeia, 2020).

The researcher concludes that while the application of Artificial Intelligence in teaching and learning can improve the quality of education, it is important to consider the role of teachers and the potential challenges and biases that may arise from the use of AI. He suggests that institutions of higher education should anticipate these possibilities and challenges and focus on the new role that teachers play in facilitating new learning by students, emphasizing factors such as creativity, imagination, innovation, and skills that cannot be performed by machines. The research also calls for further research on the applications and improvement of Artificial Intelligence in education (Fahimirad, 2018).

The Research concludes that the application of Artificial Intelligence in education is changing the form and effect of modern education and accelerating the process of education modernization. It is expected that the application of Artificial Intelligence technology in the field of education will continue to deepen in the future. Both domestic and foreign Artificial Intelligence experts and education experts will pay more attention to the application and promotion of Artificial Intelligence technology in the field of education. Although our country's education still has a long way to go to achieve the goal of "intelligence +", it can be seen that the intelligence of the educational environment and technology is becoming an inevitable trend (Li, 2020).

The research discusses the use of Artificial Intelligence in Education (AIED) and its potential to improve the quality of teaching and learning. The integration of AI and education can serve as an intelligent tutor, tool, or tutee as well as facilitating decision making in educational settings. They proposes a framework to show the

considerations of implementing AIED in different learning and teaching settings. The sturdy also outlines 10 potential research topics in AIED that are of particular interest to this journal. The goal of the journal is to facilitate the interaction and collaboration among researchers from different fields and to encourage the development of innovative new ideas and promote the inclusive and transparent use of AI in education (Hwang, 2021).

Artificial Intelligence (AI) has emerged as a transformative force in the field of education, revolutionizing the way we teach and learn. Its applications have permeated various aspects of the education ecosystem, enhancing personalized learning experiences, improving administrative efficiency, and unlocking new avenues for research and innovation. AI-powered adaptive learning platforms analyze students' performance data to tailor instructional content, pacing, and difficulty levels, ensuring each learner receives a personalized curriculum that optimizes their strengths and addresses weaknesses.

Moreover, AI-driven intelligent tutoring systems provide real-time feedback and guidance, promoting self-directed learning and fostering a deeper understanding of complex subjects. Beyond the classroom, AI streamlines administrative tasks, such as grading assessments, managing schedules, and handling enrollment processes, freeing up educators to focus more on teaching and mentoring.

Additionally, AI-driven educational tools support teachers by identifying areas where students may struggle and offering insights to develop targeted interventions. Furthermore, AI's data analytics capabilities help educational institutions to analyze large datasets, uncovering valuable trends and patterns, leading to data-informed decision-making and curriculum improvements. Students can benefit from a more engaging and adaptive learning environment, while educators and institutions can optimize their resources and foster a culture of continuous improvement in pursuit of better educational outcomes. However, as with any technology, careful consideration of ethical implications, data privacy, and the equitable distribution of AI-enabled educational resources is crucial to ensuring that this transformative technology positively impacts learners of all backgrounds (Williamson, 2017).

2.7 The Integration of Smart Class and Artificial Intelligence

There are some researches discusses the application of Artificial Intelligence technology to college English Smart Classrooms. A new teaching model of college English Smart Classroom was designed and carried out through an experimental class. The survey results show that students' satisfaction with this teaching model is as high as 80%. Therefore, the paper concludes that the application of Artificial Intelligence technology in college English Smart Classrooms can promote the intelligent development of education and improve students' satisfaction with the teaching model (Zhang, 2021).

Ikedinachi and groups discuss the implications of the advent of Artificial Intelligence (AI) technology in the education. They argue that while AI has revolutionized the way education is conducted, there are long-term issues about the relevance of teachers and their classrooms in 21st Century AI education. The paper faults recent attempts at eulogizing the impact of AI innovations in the education sector and on human development. The authors propose extensive research as necessary for contemporary scholars of AI and education technologists before proper appropriation can be made about its gains in education and human development. In conclusion, the paper suggests that the adoption of AI in education should be approached with caution and that the role of human teachers in the classroom should not be underestimated (Ikedinachi, 2019).

The researcher discusses the design of smart educational environments to support personalization in learning. The research emphasizes the importance of integrating formal and informal learning and using big data and learning analytics techniques to create autonomous adaptive learning environments. After used the big data and Ai,They think It is important to explicitly design and intentionally support learning anytime (Gros, 2016).

The researcher concludes that education plays a crucial role in enriching society and human resources. To keep up with the changing times, teacher educators and undergraduates need to be organized, professional, creative, and efficient in using

technical skills to grow students. They must also be adaptable to innovative technologies that can enhance students engagement. The use of modern technology tools in teaching improves students' knowledge and the teaching and learning process. The Smart Class is a one-stop resource for students who need research technical or writing assistance (Palanisamy, 2020).

AlFarsi discusses the evolution of education from traditional classrooms to modern Smart Class equipped with laptops, projectors, and other technologies. It highlights the importance of visual mediums in teaching and the role of Artificial Intelligence in creating Smart Class. The research aims to review the existing types of Smart Class technologies and their impact on students learning and achievement. .He concludes that a Smart Class is an effective and innovative way of learning, which is being adopted by many schools and educational systems. Smart Class technologies are used to provide interactive content, efficient distribution, and comprehensive display of educational material. The paper also highlights the importance of familiarizing parents, teachers, and students with this teaching system. The models for e-learning and distance learning have also evolved to deliver content to a large number of students efficiently (AlFarsi, 2021).

The study provides a review of research work on Smart Classroom technologies, with a focus on emerging and Artificial Intelligence (AI)-related technologies. The researcher discuss the range of technological achievements in classroom management, teaching aids, and performance assessment technologies. The role of AI in Smart Classes is thoroughly discussed, allowing researchers and developers in AI to realize the existing uses of AI in Smart Classes and get informed about future perspectives and challenges in adopting AI-based techniques in Smart Classes. The study conclude that a range of AI-assisted emerging technologies used in Smart Classrooms have been presented and discussed, and that the material presented in this survey can be useful for researchers in educational technology and educators (Dimitriadou, 2022).

Zhu, Z and others propose the concept of smart education, which focuses on improving learners' quality of lifelong learning through contextual, personalized, and

seamless learning. The authors propose a four-tier framework of smart pedagogies of smart learning environments to foster smart learners. They also propose a technological architecture of smart education that emphasizes the role of smart computing. The research concludes by discussing the challenges that smart education may face, such as pedagogical theory, educational technology leadership, educational structures, and educational ideology (Zhu, 2016).

Vazquez proposes that the use of subject-specific apps on smartphones is highly valued by students as a new format that supports and enhances learning practices. He also think further opportunities to establish connections and relations with subjects. It recommends that universities continue developing new didactic strategies to connect both learning settings (Vazquez-Cano, 2014).

As many studies have shown, the integration of Smart Classrooms with Artificial Intelligence represents a groundbreaking advancement in modern education. By combining the power of technology and AI algorithms, these Smart Classrooms offer a dynamic and personalized learning experience for students.

AI-driven systems can adapt to individual learning styles, pace, and preferences, ensuring that students receive tailored educational content and support. Moreover, Artificial Intelligence -powered virtual tutors and chatbots can provide real-time assistance, answering questions and clarifying concepts, enhancing the learning process beyond the traditional classroom setting. AI algorithms can analyze vast amounts of data to identify students' strengths and weaknesses, enabling educators to craft targeted interventions and monitor progress effectively.

The seamless integration of AI also streamlines administrative tasks, optimizing scheduling, grading, and resource allocation. It is crucial to address privacy and ethical concerns related to data collection and AI algorithms' potential biases. Overall, the integration of Smart Class and Artificial Intelligence holds immense potential to revolutionize education by empowering both teachers and students with intelligent tools and personalized learning experiences.

2.8 Related Research and Studies

From the current study, the course on Situation and Policy is a subject that covers a wide range of topics and keeps pace with the times. It mainly studies the international and domestic political, economic and social situation as well as related policies and strategies, aiming to cultivate students' comprehensive understanding of national and world development dynamics and to improve their ability to formulate and analyze policies. It is a comprehensive content that combines multi-disciplinary knowledge.

As for the current state of research, scholars and researchers of the Situation and Policy Program pay extensive attention to policy analysis and decision-making, international political situation, economic situation and development, and social situation and change. They explore the laws and methods of policy making through analyzing policies in history and reality, with a view to being able to provide more scientific and effective advice to decision makers.

At the same time, the evolution of the international political landscape and great power relations is also a focus of attention in the field in order to understand the dynamics of global politics. In addition, the Situation and Policy course also focuses on economic growth, industrial structure and regional development to provide economic support for policy making. Social dynamics, social issues, and improvement of people's livelihoods also receive much attention in order to achieve social stability and sustainable development.

Teaching Methods: With the deepening of educational reform, the teaching methods of this course on Situation and Policy are also being innovated and improved. Some scholars have proposed a variety of teaching methods, such as "situational teaching method", "case teaching method", "discussion teaching method" and so on, in order to improve students' learning interest and participation. At the same time, some scholars have studied how to utilize information technology to enrich the teaching content and form, such as online teaching, virtual laboratory and so on.

As for the preparation of teaching materials: teaching materials are an important part of the course of Situation and Policy, which is of great significance to the improvement of teaching quality. At present, a large number of Situation and Policy teaching materials have been published in China, covering a wide range of fields such as politics, economy and culture. Some scholars have evaluated and compared these textbooks and put forward some improvement opinions and suggestions. In addition, some other scholars have tried to integrate the internationalization perspective into the preparation of teaching materials to meet students' needs.

Teaching Effectiveness: The teaching effectiveness of this course on Situation and Policy has always been one of the focuses of scholars' attention. Some scholars have investigated and analyzed students' cognition and attitude towards the course through questionnaires and interviews, and found that the course has a positive effect on improving students' comprehensive quality and international perspective. Meanwhile, some other scholars have studied how to assess students' learning outcomes and teaching quality to provide a basis for further improvement of teaching.

In conclusion, Smart Class with Artificial Intelligence (AI) integration is a cutting-edge educational approach that leverages technology to enhance the learning experience and transform traditional classrooms into dynamic, interactive spaces. This innovative application of AI in education aims to optimize teaching methods, individualize instruction, and streamline administrative tasks, fostering a more personalized and effective learning environment. AI-powered adaptive learning platforms assess students' strengths and weaknesses, enabling tailored content delivery that meets each learner's specific needs, pace, and learning style. These platforms analyze vast amounts of data generated from student interactions, academic performance, and feedback, generating valuable insights for educators to refine their instructional strategies and provide targeted support to struggling students. Smart Classrooms equipped with AI-enabled educational tools, such as smart boards, virtual reality, and interactive learning systems, encourage active student engagement, collaboration, and critical thinking. Administrative tasks like grading and record-keeping are simplified through AI automation, enabling teachers to invest more time in

instruction and mentorship. As AI continues to evolve, its integration into Smart Classes holds the potential to revolutionize education by making it more accessible, inclusive, and adaptive to the ever-changing needs of students, ultimately preparing them for the challenges of the digital age. We should also ensuring that technology remains a facilitator rather than a replacement for educators, fostering a harmonious synthesis of human expertise and technological innovation.

As an important discipline, the Situation and Policy course needs to keep pace with the times in its research and development, adapt to the complex and changing international and domestic situations, pay more attention to practice and innovation, cultivate talents with a global vision and problem-solving ability, and make positive contributions to the peace and stability of the world and the prosperity and development of the country.

Chapter 3

Research Method

This section is a specific elaboration of the research component, which includes the research design, research sample, data collection and research instruments, as well as the methodology used to analyze the validity and reliability of the data. Through choosing the right scientific and appropriate methodology to carry out the right research process, it is ensured that the research achieves the desired results.

3.1 Research Design

In order for the research to be rational, scientific and ethical. It was important to define the research problem to ensure that the objectives of the research were clear and relevant; to use appropriate survey methods to collect data; to reflect the characteristics of the whole based on a representative sample; to follow ethical principles to ensure that the research process was ethical and legal; and to use appropriate analytical methods to draw conclusions and ensure that the results were trustworthy and reproducible.

The research was conducted using a combination of research methods: In terms of research on the theoretical basis, Using the literature reading method and Analytic Comparative Method to comb the literature and theoretical basis, through in-depth combing and analysis of literature and theories in Artificial Intelligence, Smart Classroom, curriculum research, education and teaching theory, Teaching and Classroom research, and so on, to establish the theoretical foundation.

In empirical research and data processing, Empirical research was carried out with the actual teaching of college classrooms, and the teaching content of the Situation and Policy course using smart teaching was selected for research. Including qualitative analysis, quantitative analysis and subjective analysis (Hartas, 2015).

Both qualitative and quantitative analyses have their own strengths and weaknesses, but both can perform a unique role in the process of data analysis; both methods can be powerful tools for understanding the relationship between teaching and learning (Eyisi, 2016). And the study should pay particular attention to the construction of the research questions when collecting data and conducting the study. Therefore, the choice of combining multiple approaches during the course of this study can further enhance the accuracy of the findings (Libarkin, 2002).

The logical flow of the study is shown in the Figure 3.1.

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│            Pre-Test             │
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│   Teaching by Smart Class with AI│
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│            Post-Test            │
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          │              │
          ▼              ▼
┌──────────────┐  ┌──────────────┐
│ Questionnaire│  │  Interview   │
└──────────────┘  └──────────────┘
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Figure 3.1 Flow of Research Design

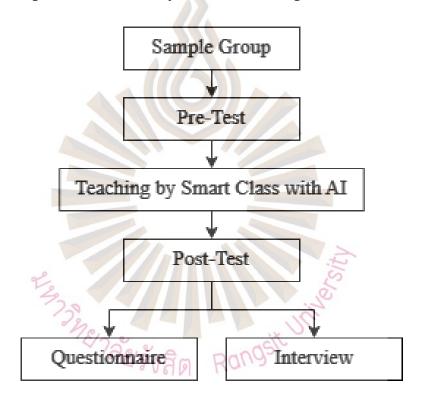## 3.2 Population and Sample

The researcher chose a general higher education institution in China. There were different grades and majors within the university, and in order for the research to be somewhat persuasive and authentic as well as universally representative, the researcher choose year 3 student and a class of 20 students was randomly selected through a public general education course

The participants of the study included 20 year 3 university students from Nanchang Institute of Technology. This included 10 male and 10 female, aged between 19 and 21 years old. Twenty students made up a class which was a complete subject of study and each student was a separate sample of the study.

3.3 Research Instruments

The selection of instruments in the research was based on the content of the study, and in order to better achieve the objectives of the study, this study selects the following research tools from the perspective of qualitative and quantitative analysis:

Table 3.1 Research Instrument

Research Objectives	Instrument
To compare the learning achievement in Situation and Policy course before and after applying Smart Class with AI by year 3 university students in China.	Pre-test and Post-test
To investigate year 3 university students' satisfaction towards the application of Smart Class with AI in Situation and Policy course in China	Questionnaire and interview

3.3.1 Lesson Plan

The teaching concept of the study was based on the requirements of the new era for undergraduate education, helping college students to correctly understand the Situation and Policy at home and abroad, and deeply understand the core of the changes, achievements, opportunities and challenges of the national cause. The research cycle of the course was designed to consist of four lessons, each consisting of two class periods totaling 90 minutes, and one lesson per week for four weeks. The researcher would apply Smart Class with AI in each lesson. The specific content was based on the Lesson Plan. A summary of the lesson plan was shown in the Table3.2.

Table 3.2 Summary of the lesson plan

Lesson	Topic	Learning Objectives	Minutes
Plan 1	Domestic and International Economy	To develop sense of worth, sense of money and an understanding of money policy.	90
Plan 2	Domestic and International Political	To develop sense of politics, sense of country and self-awareness of the political.	90
Plan 3	Domestic and International Military	To develop sense of army, sense of enlist and importance of national defense security.	90
Plan 4	Domestic and International Culture	To develop cultural confidence, cultural heritage and learn about cultural diversity.	90

In all lessons, the teaching method of Smart Class with AI was used in classroom teaching. The details involved were as follows. Intelligent Question and Answer System. Intelligent Human-Computer Interaction. Intelligent Personal Learning. Intelligent Personal Assessment

3.3.2 Achievement Test

The purpose of the exam in this study was to check the students' achievement in teaching the Situation and Policy course though applying Smart Clas with AI.

The examination was a written test, and the design of the test paper follows the following aspects:

1) Principle of orientation: the content of the questions was in accordance with the teaching concepts and content of the Situation and Policy course, with the core ideas of the course as the main examination point, and guides the students to think correctly about the exam quention.

2) Principle of standardization: the proposition needs to have a high degree of reliability, validity, and appropriate level of difficulty. The proposition of science, knowledge without error, the title and the question stem concise expression without ambiguity, the reference answer norms.

3) Comprehensive principle: in order to ensure that the core design of the test paper was reasonable, based on the proposition of the content of the appropriate innovations, the design of a reasonable open-ended questions to provide students ability with free thinking.

Based on the above principles of test paper design, this study designed two test based on instruction, pre-test and post-test. The test papers of the two exams included the same type of questions, 15 fill-in-the-blank questions (4 points each), and 2 short-answer questions (20 points each), The total score was 100 points.

3.3.3 Questionnaire

Investigating students' satisfaction toward courses has always been a key component of teaching and learning, and in this research we explore the satisfaction of students before and after taking a Situation and Policy course with the application of Smart Class with AI.

This research was conducted using a questionnaire. The questionnaire was designed using quantitative analysis.The questions were designed using the Likert scale.The respondents were asked to indicate their level of agreement or disagreement with each statement using a set of pre-determined response options.

The range from five levels: "Strongly Agree (5)", "agree (4)", "Neutral (3)", " disagree (2)", "Strongly disagree (1)".

The respondents were fully informed before completing the scale about how the scale was scientifically completed and the need to ensure authenticity and reliability.

The scale investigated one topic "student satisfaction", and had three categories, each with 5 related statements or items. The three categories of questionnaire:

Table 3.3 Topic of quentionnaire

Sections	Topic
Part A	Classroom Activity and Attendance
Part B	Course knowledge learning efficiency
Part C	Self-perception and satisfaction

3.3.4 Interview

The Focus Group Interview was an effective data collection method in teaching satisfaction surveys. Through collective interviews, opinions and feedback from multiple participants were obtained during the session to gain insight into the interviewee's comprehensive evaluation of teaching quality, teacher performance, and teaching methods. Through this method, diverse opinions were discovered and learning differences among different students were explored, which in turn provide valuable references for teaching improvement. In addition, the interactive and open nature of the group interview method allows students to fully express their feelings, while promoting communication and cooperation between teachers and students.

The collective interview method serves as a powerful tool in the assessment of teaching and learning to gain a comprehensive understanding of students' satisfaction with teaching and their opinions.

In order to gain a deeper understanding of students' views on Smart Class with AI as a teaching method, so as to better design the teaching content. The interviews would further establish a good teacher-student relationship, enhance the interaction and communication between teachers and students, and create a positive learning atmosphere.

In this study, all 20 students were divided into two groups, and interviews were conducted with each of the two groups. Combined with the content of the questionnaire, the strengths and weaknesses of Smart Class with AI in the perspective of student groups were explored.

3.4 Validity and Reliability

3.4.1 Validity

There were various methods for testing validity, and in this research, the method of Item-Objective Congruence (IOC) was chosen in order to explore the survey between teaching effectiveness and the application of Smart Class with AI.

Item-objective congruence was a term commonly used in the field of educational and psychological testing. It refers to the alignment or consistency between the content of a test item (question or task) and the specific learning objective or construct that the item was intended to measure. In other words, item-objective congruence (IOC) can demonstrate the validity of the content being measured in the study. Three experts were selected for IOC evaluation in this research. The score range of IOC is from -1 to +1.

1) +1: the item clearly matches the stated objectives;

2) 0: the item is unclear;

3) -1: the item does not match the stated objectives.

The valid score range for evaluation results is from +0.67 to +1. If the value of the item is between 0.67 and 1.00, the item was applied as part of the instrument. However, if the value is below 0.67, it is considered problematic and should be reformulated or deleted. The results showed that in this study, all the research instruments were alidited with the score which was higher than 0.67.

3.4.2 Reliability

A reliability analysis in scientific research was a statistical method that assesses the consistency and dependability of data. It's essential to ensure that the results from a measurement were stable over time, across conditions, or when multiple raters were involved. Various techniques, like test, internal consistency (Cronbach's alpha), and inter-rater reliability, were used to evaluate different aspects of reliability.

A reliable measurement was crucial for drawing valid conclusions and generalizing findings in research. In this research. Internal consistency reliability was a concept used to measure the reliability of instruments. There was a need to ensure that the measurement tools they use were reliable, that was produce consistent results across contexts. By assessing the agreement between the items in the measurement tool, whether the items in the measurement tool were measuring the same concept or property. Thus, Cronbach's alpha was selected as the indicator for reliability analysis.

Table 3.4 Cronbach's Alpha

Cronbach's Alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.3 \leq \alpha < 0.7$	Poor
$\alpha < 0.3$	Unacceptable

Source: Cronbach, 1951

Cronbach's alpha ranges from 0 to 1, with higher values meaning higher reliability of the scale, 0.70-0.98 were high reliability. However, if the value was below 0.7, it was considered problematic and should be reformulated or deleted. In this study, the reliability result of questionair was 0.93 which was reliable to be applied.

3.5 Data Collection Procedure

3.5.1 Ethical Approvement

In order to carry out the research at the school, the researcher obtained a letter of approval from Nanchang Institute of Technology. Since the participants in this study were all adults in age, this study only required obtaining consent from the participants themselves.

3.5.2 Confidentiality

In order to ensure the security of information, all information regarding students' personal data and questionnaire responses were kept confidential in this research. At the end of the research, the researcher would delete all privacy-related data.

3.6 Data Analysis

The data analyzed in two ways which corresponded to the objectives of the study: explore the role of the application of Smart Class with AI in the Situation and Policy course for year 3 college students. The data from the two pre-test and post-test were used to evaluate and analyze the individual student's learning achievement. Since this study concernded of only 20 students, non-parametric analysis was applied.

And assess the positive impacts and shortcomings of the application of Smart Class with AI through questionnaires and interviews, especially student satisfaction and learning efficiency. In short, quantitative data from the survey was used to analyze students' perceptions of the application of Smart Class with AI in the Situation and Policy course.

The data for quantitative analysis were processed from the following perspectives: the results of achievement test (pre-test and post-test) scores were analyzed by means and standard deviation test; the results of questionnaires and interviews were analyzed by internal consistency reliability. These methods were used to study the Situation and Policy course of Nanchang Institute of Technology year 3 college students in the Situation and Policy course and to investigate students' satisfaction with the use of Smart Class with AI in the Situation and Policy course (Allen, 2007).

Table 3.5 Means and Standard

Mean Score Range	Students' Perceptions Level
4.21 – 5.00	Highest
3.41 – 4.20	High
2.61 – 3.40	Moderate
1.81-2.60	Low
1.00-1-80	Lowest

Source: Likert, 1932

Chapter 4

Analysis And Results

This research adopted an empirical experimental design to compare the Situation and Policy course scores of year 3 undergraduate students before and after Smart Class teaching, and examines students' satisfaction with AI technology based Smart Class teaching model in formal and policy classrooms. This study used the following tools: pre-test, post-test, focus group interviews, and questionnaire surveys.

4.1 Analysis of Situation and Policy Test Results

The research content of this section was to introduce the results of the first research question. This question was whether AI based Smart Class teaching can be used to improve the performance of Citation and Policy course for year 3 undergraduate students. Based on the results of pre-test and post-test, these conclusions were drawn. During the evaluation process, two professionals participated to ensure that there was no bias. Descriptive statistics of pre and post-test scores were determined using mean values, standard deviations, and paired sample t-test with $p \leq 0.5$.

4.1.1 Comparison of Pre-test and Post-test Scores

According to the pre-test and post-test, the test results of the sample group were shown in Table 4.1, with a maximum score of 100 points. In terms of pre-test scores, the highest was 82, and the lowest was 45. After conducting Smart Class teaching with AI, participants achieved significantly higher scores in the Situation and Policy course, with the highest score 90 and the lowest score 61. The student who made the most progress achieved an improvement of 23. The results after the test showed that all 20 students made significant or slight progress. The score test results show the differences, score changes, and percentages between the pre-test and post-test scores of each participant.

Table 4.1 Pre-test and Post-test Score

ID	Pre-Test	Post-Test	Change in score	Difference %
N01	68	80	12	18%
N02	71	79	8	11%
N03	60	77	17	28%
N04	70	79	9	13%
N05	45	61	16	36%
N06	62	75	13	21%
N07	62	72	10	16%
N08	55	78	23	42%
N09	66	80	14	21%
N10	77	87	10	13%
N11	82	88	6	7%
N12	70	84	14	20%
N13	66	77	11	17%
N14	68	77	9	13%
N15	72	85	13	18%
N16	67	75	8	12%
N17	63	82	19	30%
N18	48	66	18	38%
N19	80	90	10	13%
N20	60	80	20	33%

Comparing the original scores of the pre-test and post-test, the results showed that all 20 learners scored higher in the post-test than in the pre-test. Make the following comparison based on the scores before and after the test.

4.1.2 Analysis of Paired Sample T-test

By a T-test analysis the results of the two test. The average value of Pre-test was 65.6, and the standard deviation was 9.14; The average value of Post-test was 78.6, the standard deviation was 6.80. The average difference between the two test results was 13, indicating that the overall score of the subsequent test results was relatively higher.

Table 4.2 T-test Results

	N	Mean	S.D	t	Sig.
Pretest	20	65.6	9.14	5.10	0.000
Posttest	20	78.6	6.80		

4.1.3 Pretest and Posttest Comparison

The following compares the pre-test and post-test scores of each participant (figure 4.1). The dashed line on the graph represents the pre-test score, while the solid line represents the post-test score.

It compares the average values of the pre-test and post-test (figure 4.2). The average score of the pre-test was 65.6, while the average score of the post-test was 78.6. The performance of the post-test was significantly higher than that of the pre-test.

From the test results, it can be seen that the scores of all students have improved, and the overall level of learners has been improved, indicating a significant improvement in students' grades in the Situation and Policy course. This indicates that Smart Class with AI has been proven to be an effective teaching method in classroom teaching of Situation and Policy.
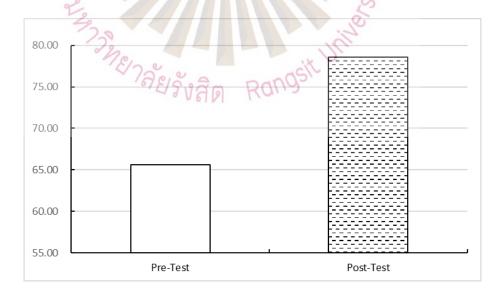
Figure 4.1 Average of Pre-test and Post-test
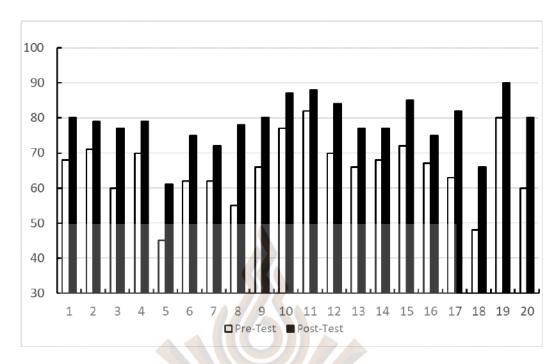
Figure 4.2 Pre-test and Post-test

4.2 Questionnaire Data Analisis

For this study, quantitative data were collected using a five-point Likert scale to measure students' attitudes towards Smart Class with AI in Situation and Policy courses, where 1 indicates a strong disagreement and 5 indicates a firm agreement. It consisted of 15 questions, divided into three sections: Part A: Classroom Activity and Attendance. Part B: Course knowledge learning effectiveness. Part C: Self perception and satisfaction. Each of the 30 participants received a copy of this questionnaire. In order to analyze the survey data, descriptive statistics were used (Means and Standard Deviations). Based on the mean scores, the highest range was Part A, the medium range was Part B and Part C.

The results of the questionnaire survey were analyzed for reliability. The result obtained by using Cronbach' Alpha for the data is 0.934, and this result was excellent.

It shows the mean scores (Table 4.3) and standard deviations of students' satisfaction with Part A: Classroom Activity and Attendance. "I come to every class." (item 2), This has achieved a relatively high level. This indicates that students have a positive attitude towards the classroom and actively participate in each class.

Table 4.3 Part A

Part A: Classroom Activity and Attendance	Mean	SD	Interpretation
1. I'm active in the class	3.73	1.18	High
2. I come to every class	4.43	0.84	High
3. I participate well in class	3.97	1.05	High
4. Feeling better about the class atmosphere	3.80	0.98	High
5. I like the activities in class	3.80	0.95	High
Average	3.95	1.00	High

Based on the results of Part B: Course knowledge learning effectiveness, the means and standard deviations of the students' ratings were presented in Table 4.4. "The knowledge from this class was useful"(item 2) and "I can learn more knowledge through this"(item 3), These have achieved a relatively high level. This indicates that students can learn knowledge in the Situation and Policy classroom of Smart Class with AI teaching mode, and the knowledge learned can be perceived by students.

Table 4.4 Part B

Part B: Course knowledge learning effectiveness	Mean	SD	Interpretation
1. I learned a lot knowledge in class	3.90	0.83	High
2. The knowledge from this class was useful	4.23	0.92	High
3. I can learn more knowledge through this	4.03	0.95	High
4. Learn and memorize directly in the class	3.80	1.17	High
5. It was easy to learn the knowledge	3.70	1.10	High
Average	3.93	1	High

Based on the results of Part C: Self perception and satisfaction, the means and standard deviations of the students' ratings were presented in Table 4.5. "I'm very satisfied with the process of this course", "I think I have learned a lot from this course" and "I will continue to study this course", These have achieved a relatively high level. This indicates that the Smart Class with AI teaching model can play a very effective role in the Situation and Policy classroom, and they were satisfied with this teaching model.

Table 4.5 Part C

Part C: Self perception and satisfaction	Mean	SD	Interpretation
1. I'm very satisfied with the process of this course	4.10	1.01	High
2. I think I have learned a lot from this course	4.00	0.86	High
3. I will continue to study this course	4.13	1.12	High
4. I feel that this course was important to me	3.73	1.00	High
5. I think I'm a good fit for this class method	3.70	1.04	High
Average	3.93	1.00	High

4.3 Analysis of Focus Group Interview

The purpose of this study was to provide an overview of the responses collected from focus groups regarding student attitudes. The research used thematic analysis techniques to analyze the obtained data. So that can quickly collect detailed information about students' attitudes. The information collected in this way can supplement and support the information collected through questionnaires in several aspects.

The 20 participants involved in the research voluntarily conducted interviews after participating in the course. The topic of the interview consists of three parts. During the interview and Q&A, the three main categories were A: Classroom Activity and Attendance. B: Course knowledge learning effectiveness. C: Self perception and satisfaction. The detailed information can be found in the following content.

4.3.1 Classroom Activity and Attendance

In our research on Situation and Policy courses, based on student feedback, the teaching method of Smart Class with AI has been proven to be an effective teaching tool. Students generally believe that information and intelligent teaching methods were both interesting and active. In addition, they said that in the teaching method of Smart Class with AI, they feel less resistant and shy, and they prefer to explore course knowledge after using intelligent tools.

Through artificial intelligence tools, students believe that they can summarize and analyze their learning outcomes. Obviously, compared to traditional courses, students were more enthusiastic about the entire teaching method. These data were based on the answers provided by the students, and some of the answers were listed below.

"In the classroom with the help of artificial intelligence, most students were willing to participate in classroom activities." (Student 6, Group 1)

"This teaching mode was more effective in mobilizing everyone's learning enthusiasm than traditional teaching." (Student 8, Group 1)

"Using intelligent teaching can make me want to actively participate in classroom interaction." (Student 5, Group 2)

4.3.2 Course knowledge learning effectiveness

During the interview, it was learned that students have many questions about the knowledge points of the Situation and Policy course. Reasonably use Smart Class with AI to help students quickly acquire knowledge content. Students use artificial intelligence tools to solve their own problems in the classroom. Teachers were able to collect questions raised by students during the course while utilizing Smart Class with AI. Therefore, Smart Class with AI has a very effective effect on course knowledge points. According to the student responses below, all of this data was collected directly from their responses.

"I can use artificial intelligence tools to search and collect more classroom knowledge." (Student 3, Group 1)

"The teaching method of Smart Class with AI can help me solve the problems I encounter in the first time." (Student 5, Group 2)

"With the help of intelligent teaching, I can clearly feel that there was better learning efficiency and effectiveness." (Student 7, Group 2)

4.3.3 Self perception and satisfaction

During the interview, it was learned that students' feelings towards traditional classrooms were relatively dull and boring. However, Smart Class with AI has increased their interest in Situation and Policy classrooms. Most students enjoy intelligent teaching content, such as tools for artificial intelligence. Smart Class with AI enables them to learn in innovative ways, and after adapting to new teaching methods, students also feel that. Therefore, Smart Class with AI gives students more motivation to sign up for courses. According to the student responses in the table below, all of this data was collected directly from their responses.

"Compared to traditional teaching methods, I am more accepting of Smart Class with AI." (Student 1, Group 1)

"I am very satisfied with both the teaching process and the tools of artificial intelligence." (Student 9, Group 1)

"I can feel the teaching advantages and characteristics of Smart Class with AI in the Situation and Policy classroom, which were very helpful for my learning." (Student 2, Group 2)

Chapter 5

Conclusion, Discussion And Recommendation

This chapter presents the summary of the research. It includes summary, discussion, and Recommendations.

5.1 Conclusion

This study aimed to achieve two research objectives:

1) To compare the learning achievement in Situation and Policy course before and after applying Smart Class with AI by year 3 university students in China.

2) To investigate year 3 university students' satisfaction towards the application of Smart Class with AI in Situation and Policy course in China.

This study measured Nanchang Institute of Technology year 3 students' knowledge and skills using pre-test, post-test, questionnaire survey, and focus group interview. Based on the mixed mode method, the collected data was analyzed and the following conclusions were drawn.

5.1.1 The Result of Pre-test and Post-test Data Analysis

The purpose of this study was to use Smart Class with AI to improve the Situation and Policy Course Scores of Year 3 Students in NanChang Institute of Technology University. Following the pre-test and post-test results, a paired sample t-test were conducted to compare the learning performance within one group of students. Education methods were constantly developing towards informatization and intelligence. This teaching model was different from traditional. It can provide more for teachers and students, improve their learning efficiency, and enable students to achieve better academic performance in the context of situations and policies.

The findings of the study can be concluded as follows:

1) A sample t-test showed that the post-test mean (78.6) was significantly higher than the pre-test mean (65.6). In the sample group, the standard deviations of the pre-and post-test were respectively 9.14 and 6.80. Compared to the pre-test, the post-test had a higher mean score. Students' course achievement improved after using Smart Class with AI, as indicated by their higher mean score on the post-test with the significance value of 0.01.

2) In the pre-test, the highest and lowest scores were, respectively 82 and 42. Post-test scores, the highest and lowest scores were, respectively 90 and 61. The score with the largest difference between the pre test and post test increased by 23 points,and the highest post-test score was 8 points higher than the highest pre-test score. In the post-test, the lowest score was the 16 points higher than the lowest score on the pre-test.

3) Most of the participants, 9 out of 20, scored above 80 on the post-test. In contrast, only two students scored 80 or higher on the pre-test, while the rest scored below that level.

4) For all 20 students, all participants scored higher on the post-test than on the pre-test. The improvement in scores ranged from 6 to 23 points, respectively.

In light of the findings of this study, The use of Smart Class with AI teaching methods can effectively improve the performance of year 3 university students in Situation and Policy courses. The results of the study confirmed these findings.

5.1.2 Analysis Results of Focus Group Interview

As a second objective, this study aimed to investigate the satisfaction of year 3 students at the NanChang Institute of Technology with Smart Class with AI as a new teaching method. Qualitative data was collected through focus group interviews with two groups of students, each consisting of 10 students. The reliability and validity of the survey data were determined through statistical analysis methods.

Conduct thematic analysis by recording, transcribing, interpreting, and analyzing interview data. According to the survey results, students showed a positive attitude towards Smart Class with AI to improve their performance in situational and policy courses. The respondents' responses were summarized as follows:

1) All students believed that they like the new teaching method of Smart Class with AI. Based on their questionnaire survey results and focus group interviews, this conclusion was significant.

2) Most students believed that Smart Class with AI can help them learn because it can solve problems in a timely manner, intelligently analyze students' learning status, and further provide favorable learning suggestions for students.

3) Smart Class with AI was also considered to have areas for improvement, such as incomplete personalized analysis of students; Strict protection was required for students' personal privacy.

4) Students have felt the advantages of the Smart Class with AI teaching model in the Situation and Policy course, and also believe that it can be extended to other courses. Some participants suggested further deepening the use of Smart Class with AI teaching mode and fully developing intelligent and information-based teaching methods.

5.2 Discussion

As mentioned above, two key findings were identified in the study. Firstly, the study found that year 3 students at the NanChang Institute of Technology improved their Situation and Policy course achievement by using the Smart Class with teaching model. The second finding was that year 3 students at the NanChang Institute of Technology showed positive satisfaction when using Smart Class with AI for Situation and Policy classroom learning. The students are satisfied with the application of this teaching method and have made positive evaluations. In the above discussion, it has been discussed how these findings can help answer the research questions raised in this study.

5.2.1 Students' Situation and Policy course Test Achievement

The research results indicated that using Smart Class with AI for Situation and Policy teaching can help improve students' course performance. Among Of the 20 students in this study, all scored above 60 on the Post-test, with 9 students scoring above 80. The Post-test results were seen to be relatively favorable, implying that most of the students scored relatively well on the course exam. The type of questions used in the test were fill-in-the-blank and short-answer questions that were closely related to the curriculum, and the fact that students were able to achieve excellent scores on the test answer sheet indicates that the students who participated in the study were learning enough knowledge and content in the Situation and Policy class.

In terms of average scores, the Post-test scores (78.6) improved by 13 points compared to the Pre-test scores (65.6). Specifically, students' individual and overall performance improved significantly, and in terms of Post-test results, students were able to complete the test of Situation and Policy course knowledge better.

By comparing the results of the Pre-test and Post-test scores, it can be seen that there was a significant difference between the results of the two tests, with the Post-test scores being significantly better.The curriculum taught in the Pre-test was a traditional teaching model, while the curriculum taught in the Post-test was the result of the test after the use of Smart Class with AI.

The difference in scores between the two tests can illustrate the impact of the mode of instruction. The improvement of students' grades indicates that Smart Class with AI has a positive impact on students' classroom learning outcomes, and was further evidence of the effectiveness of Smart Class with AI. Therefore, the results of this study were consistent with the above results, providing us with the answer to the first research question.

5.2.2 Students' Satisfaction

The purpose of this study was to examine students' satisfaction when learning course. It using a five-point Likert scale, with one = strongly disagree and 5 = strongly

agree. There were 15 items in the questionnaire, which were divided into three parts: Part A: Classroom Activity and Attendance. Part B: Course knowledge learning effectiveness. Part C: Self perception and satisfaction.

There were 20 participants (N=20) in this study who filled out the questionnaire. The findings of this study were analyzed using descriptive statistics (Mean and standard deviation). Part A was a range of 3.95 ± 1, Part B was a range of 3.93 ± 1, Part C was a range of 3.93 ± 1. Overall, the following conclusions can be made:

1) The questionnaire rated all items at a 'high' level. There were not partially disagreeable items.

2) Based on the descriptive statistical analysis results of the questionnaire, this study concludes that students have a positive attitude towards using Smart Class with AI for learning Situation and Policy courses. In addition, none of the questions received a "strong opposition" response; This indicates that students were satisfied with teaching using Class with AI.

3) Students also unanimously believe that the teaching method of Class with AI can be applied to other subject areas.

Integrating Smart Class into teaching methods is essential for enhancing both teaching quality and student satisfaction.By incorporating adaptive learning platforms, intelligent hardware, and personalized feedback systems, educators can tailor instruction to individual student needs, fostering a more engaging and effective learning experience. Intelligent technology also enables real-time assistant of student progress, allowing teachers to identify areas of difficulty and provide timely support.

Moreover, collaborative tools and interactive content can promote student engagement, encouraging active participation and a deeper understanding of the subject matter.

By embracing intelligent technology, educators can create a dynamic and responsive learning environment that not only improves teaching effectiveness but also

enhances overall student satisfaction with the educational experience. Intelligent technology allows for instant communication and collaboration, enabling students to connect with peers and educators seamlessly.

Furthermore, the use of intelligent technology facilitates a more inclusive and diverse learning atmosphere. Smart Class with AI can accommodate various learning styles and pace, ensuring that each student receives a customized educational experience. Hardware and software applications offer immersive and hands-on learning opportunities, transcending traditional boundaries and providing a more vivid understanding of complex concepts.

In essence, the integration of intelligent technology into teaching methods not only elevates the quality of education but also plays a pivotal role in shaping well-rounded and satisfied students prepared for the challenges of the modern world.

5.3 Recommendations

This study draws favorable conclusions on a scientific basis, the following recommendations were made in light of the study's findings and conclusions:

5.3.1 Recommendations for Implementation

1) The Smart Class with AI teaching model has been successfully applied to the Situation and Policy courses of the NanChang Institute of Technology year 3 students. Therefore, other universities can also benefit from using the Smart Class with AI teaching model for classroom teaching.

2) The idea of using the Smart Class with AI teaching model in teaching other subjects was considered a useful learning method and was therefore considered another way to teach other subjects.

3) There were many methods to apply the Smart Class with AI teaching model in teaching other disciplines. Because this intelligent teaching method can provide various assistance and personalized learning suggestions for students.

5.3.2 Recommendations for Future Research

There were still some limitations in this study, and the researchers propose the following suggestions for further research.

1) Only twenty year 3 students from Nanchang Institute of Technology in China participated in this study. Therefore, comparisons conducted in other universities in China can provide meaningful research content and help validate and ensure the credibility of the results.

2) In this study, the duration of the course was limited, and the teaching cycle of one month was relatively short. Therefore, in order to obtain more reliable results, it was necessary to conduct further research over a longer period of time.

3) The comparison between the teaching methods of Smart Class with AI and traditional classrooms was not sufficient, and further comparison can be made on the similarities and differences between the two, which helps to further explore classroom teaching models.

4) Teachers have relatively little exploration in the Smart Class with AI teaching mode, and can fully utilize teaching resources to further expand the advantages of this teaching mode.

5) The Smart Class with AI teaching mode can also be used to learn other subjects and skills, and can also be applied in other aspects of life.

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Appendices

Appendix A

Letter of Approval

Certificate of Approval

Subject: Approval to collect data for Research

Dear Sir/Madam,

I am currently enrolled in the master of education in Curriculum and Instruction, at Rangsit University, Thailand. I am conducting a research on the "The application of Smart Class with Artificial Intelligence for Situation and Policy course of year 3 university students in China". This research requires students participation. The instruments involved during the study pre-test and post-test, quentionnaire for obtaining the required data. Therefore, I would like to seek permission from the administration to allow me to collect data at this school and will guarantee that all private information will be kept confidential and deleted after the research is complete.

The time frame of the research is from September 1 to November 30, 2023

Your sincerely
Jiabei Tang
Rangsit University, Thailand.
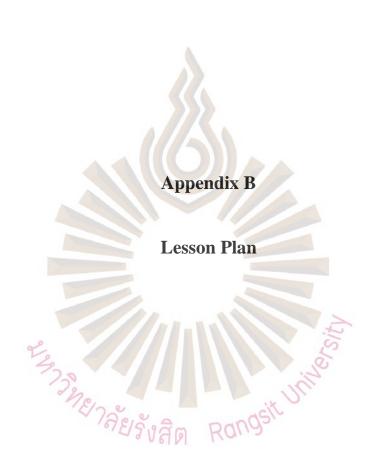
Since the study requires data for analysis pruposes, Jiabei Tang would collecting data from this school and you are kindly requested to allow him to collect data with the following conditions.Providiing research participants with information to make an informed data as to whether to take part in research.

Follow the prior mentioned document have been reviewed and approved by the administration of Nanchang Institute of Technology.

Stamp
Nanchang Institute of Technology, Administration Office
JiangXi, China.

Appendix B

Lesson Plan

Lesson Plan 1

Course: Situation and Policy   Class: Date:

Time: 90 minutes (45 minutes/ 1 class)

Topic: Domestic and International Economy

Teaching objectives:

    To develop sense of worth, sense of money and an understanding of money policy.

    To Introduce Chinese economy and its integration into the global economy.

    To explore the impact of China's economic policies on the global economy.

Teaching method: Smart Class with AI. Intelligent Question and Answer System.

* It will be a smart device that will automatically record students' action behavior: questions, answers, discussions, etc.

The First Class (45 minutes)

1. Introduction to the Chinese Economy (10 minutes) Brief overview of the size and significance of the Chinese economy in the world. Discuss China's transition from a planned economy to a market-based economy. Mention China's economic growth over the past few decades and its impact on the global economy. * Utilize multimedia devices in the classroom to access AI tools. Finding information about Chinese Economy using AI smart tools.
2. Factors Driving Chinese Economic Growth (10 minutes) Discuss key factors such as export-led growth, foreign direct investment, and infrastructure development. Highlight the role of China's labor force, technology advancements, and government policies in driving growth. Show real-world examples of Chinese industries that have become globally competitive.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about Factors Driving Chinese Economic Growth using AI smart tools.

3.China's Trade Relations with the World (10 minutes)

Discuss China's role as the "world's factory" and its export-oriented approach.

Explore China's major trading partners, including the United States, the European Union, and neighboring countries.

Discuss the challenges and controversies in China's trade practices, such as intellectual property issues and trade imbalances.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about China's Trade Relations with the World using AI smart tools.

Q&A and Discussion (15 minutes)

Encourage students to ask questions and share their initial thoughts on the topic.

Spark a discussion about the opportunities and challenges presented by China's economic rise for both China and the international community.

* Utilize multimedia devices in the classroom to access AI tools. Learn by sharing the information you have gathered with your classmates and teachers, and discuss the questions and insights you have generated.

The Second Class (45 minutes)

1. China's Belt and Road Initiative   (10 minutes)

Introduce the Belt and Road Initiative as a major global infrastructure project led by China.

Discuss the goals, scope, and potential benefits of the BRI for participating countries and the global economy.

Highlight the concerns and criticisms surrounding the BRI, including debt issues and geopolitical implications.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about China's Belt and Road Initiative using AI smart tools.

2. Challenges and Opportunities for the Global Economy (10 minutes)

Explore the ways in which China's economic growth has both positively and negatively affected the global economy.

Discuss how other countries have responded to China's rise, including trade policies and investment strategies.

Analyze the potential impact of China's economic policies on global supply chains and the distribution of economic power.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about Challenges and Opportunities for the Global Economy using AI smart tools.

3. Future Developments in the Chinese Economy (10 minutes)

Discuss ongoing economic reforms in China, including efforts to shift towards innovation-driven growth.

Explore potential scenarios for the future of China's economy and its implications for the world.

Encourage students to think critically about the challenges and opportunities that lie ahead.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about Future Developments in the Chinese Economy using AI smart tools.

Wrap-up and Reflection (15 minutes)

Summarize the key points discussed in the lesson.

Prompt students to reflect on what they've learned and consider the broader implications of China's economic role in the world.

Assign a related reading or research assignment for the next class to further deepen their understanding.

Utilize multimedia devices in the classroom to access AI tools. Summarize what you have learned in class and think about what you will learn in the next lesson.

Lesson Plan 2

Course: Situation and Policy   Class: Date:

Time: 90 minutes (45 minutes/ 1 class)

Topic: Domestic and International Political

Teaching objectives:

To develop sense of politics, sense of country and self-awareness of the political.

To teach students with the political dynamics of China's international relations.

To explore major international issues and challenges concerning China.

Teaching method: Smart Class with AI. Intelligent Question and Answer System.

* It will be a smart device that will automatically record students' action behavior: questions, answers, discussions, etc.

The First Class (45 minutes)

1.Introduction to Chinese Foreign Policy (10 minutes)
Explain the concept of foreign policy and its significance in international relations.

1.Introduction to Chinese Foreign Policy (10 minutes)

Explain the concept of foreign policy and its significance in international relations.

Introduce the principles that have historically guided China's foreign policy, such as non-interference and peaceful coexistence.

Discuss China's evolving role in global affairs and its emergence as a major player on the international stage.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about Chinese foreign policy using AI smart tools.

2. Key Aspects of Chinese Foreign Policy (10 minutes)

Explore China's relationships with major world powers, including the United States, Russia, and the European Union.

Discuss China's approach to regional issues, such as its stance on territorial disputes in the South China Sea and its relationship with neighboring countries.

Highlight China's involvement in international organizations and its efforts to shape global governance.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about key aspects of Chinese foreign policy using AI smart tools.

3. Influences on Chinese Foreign Policy (10 minutes)

Examine the domestic factors that impact China's foreign policy decisions, such as economic development, political stability, and public opinion.

Discuss how China's historical and cultural background influences its approach to international relations.

Analyze the role of ideology, including the Chinese Communist Party's worldview, in shaping foreign policy.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about Influences on Chinese foreign policy using AI smart tools.

Q&A and Discussion (15 minutes)

Encourage students to ask questions and share their initial thoughts on China's foreign policy.

Lead a discussion on the challenges and opportunities that China's foreign policy presents in the global context.

* Utilize multimedia devices in the classroom to access AI tools. Learn by sharing the information you have gathered with your classmates and teachers, and discuss the questions and insights you have generated.

The Second Class (45 minutes)

1. China's Role in Multilateral Organizations (10 minutes)

Discuss China's participation in organizations like the United Nations, World Trade Organization, and regional groups like BRICS and SCO.

Analyze China's goals within these organizations and its efforts to shape international norms and rules.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about China's role in multilateral organizations using AI smart tools.

2. China's Relations with Developing Countries (10 minutes)

Explore China's engagements with developing nations through initiatives like the Belt and Road Initiative (BRI) and South-South cooperation.

Discuss the motivations behind China's investments and aid to developing countries and the implications for global geopolitics.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about China's relations with developing countries using AI smart tools.

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3. Geostrategic Issues (10 minutes)

Examine China's territorial disputes, particularly in the South China Sea, and their implications for regional stability and international law.

Discuss how these disputes have led to tensions with neighboring countries and the United States.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about geostrategic issues using AI smart tools.

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4. Future Scenarios and Implications (5 minutes)

Prompt students to think about potential future developments in China's international political relations.

Encourage critical thinking on how China's actions might impact global politics, security, and economics.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about future scenarios using AI smart tools.

Wrap-up and Reflection (10 minutes)

Summarize the key points discussed in the lesson.

Prompt students to reflect on the complexities of China's role in international politics and its implications for the world.

Assign a related reading or research assignment for the next class to further deepen their understanding.

Utilize multimedia devices in the classroom to access AI tools, such as computer, phone, ipad. Summarize what you have learned in class and think about what you will learn in the next lesson.

Lesson Plan 3

Course: Situation and Policy   Class: Date:

Time: 90 minutes (45 minutes/ 1 class)

Topic: Domestic and International Military

Teaching objectives:

    To develop sense of army, sense of enlist and importance of national security.

    To provide students with an overview of Chinese military capabilities.

    To explore the international aspects of Chinese military relations.

Teaching method: Smart Class with AI. Intelligent Question and Answer System.

* It will be a smart device that will automatically record students' action behavior: questions, answers, discussions, etc.

The First Class (45 minutes)

1. Introduction to Chinese Military (10 minutes)
 	
    Provide a brief overview of the structure and size of Chinese military, the People's Liberation Army (PLA).
 	
    Discuss the historical development of Chinese military capabilities and its modernization efforts.
 	
* Utilize multimedia devices in the classroom to access AI tools. Finding information about Chinaese military using AI smart tools.

2. Chinese Regional Security Concerns (10 minutes)
 	
    Explore Chinese security concerns in its immediate neighborhood, including territorial disputes and regional tensions.
 	
    Discuss Chinese military activities in the South China Sea and its impact on regional stability.
 	
* Utilize multimedia devices in the classroom to access AI tools. Finding information about Chinese regional security concerns using AI smart tools.

3. Chinese Military Modernization (10 minutes)

Discuss Chinese efforts to modernize its military technology, including advancements in naval, air, and cyber capabilities.

Analyze the implications of Chinese military modernization for regional and global security.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about Chinese military modernization using AI smart tools.

Q&A and Discussion (15 minutes)

Encourage students to ask questions and share their initial thoughts on Chinese military capabilities and regional security concerns.

Lead a discussion on the potential challenges and opportunities for diplomatic and security cooperation in the region.

* Utilize multimedia devices in the classroom to access AI tools. Learn by sharing the information you have gathered with your classmates and teachers, and discuss the questions and insights you have generated.

The Second Class (45 minutes)

1. Chinese Role in Global Security Issues (10 minutes)

Explore Chinese participation in international peacekeeping operations, counterterrorism efforts, and non-proliferation initiatives.

Discuss Chinese contributions to maintaining global security and its alignment with international norms.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about Chinese role in global security issues using AI smart tools.

2. Chinese Arms Exports and Defense Industry (10 minutes)

Analyze Chinese arms exports and its impact on regional stability and global arms trade.

Discuss the growth of Chinese defense industry and its implications for the global military market.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about Chinese arms exports and defense industry using AI smart tools.

3. Geostrategic Implications (10 minutes)

Discuss how Chinese military growth has led to shifts in regional and global power dynamics.

Analyze how other countries, particularly neighboring nations and the United States, view Chinese military expansion.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about geostrategic implications using AI smart tools.

4. Future Scenarios and Implications (5 minutes)

Prompt students to consider potential future developments in Chinese military capabilities and their implications for regional and global security.

Encourage critical thinking on how countries might respond to Chinese military activities.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about future scenarios and implications using AI smart tools.

Wrap-up and Reflection (10 minutes)

Summarize the key points discussed in the lesson.

Prompt students to reflect on the complexities of Chinese military relations and their impact on global security.

Assign a related reading or research assignment for the next class to further deepen their understanding.

Utilize multimedia devices in the classroom to access AI tools, such as computer, phone, ipad. Summarize what you have learned in class and think about what you will learn in the next lesson.

Lesson Plan 4

Course: Situation and Policy   Class: Date:

Time: 90 minutes (45 minutes/ 1 class)

Topic: Domestic and International Culture

Teaching objectives:

　　To develop cultural confidence, cultural heritage and learn about cultural diversity.

　　To introduce students to the richness of Chinese culture.

　　To explore the interplay between Chinese and international cultures.

Teaching method: Smart Class with AI. Intelligent Question and Answer System.

* It will be a smart device that will automatically record students' action behavior: questions, answers, discussions, etc.

The First Class (45 minutes)

1. Introduction to Chinese Culture (10 minutes)
Define and discuss the broad scope of Chinese culture, including aspects such as literature, art, philosophy, music, cuisine, and traditional practices. 　　Highlight the historical continuity of Chinese culture and its role as one of the world's oldest and most influential civilizations. * Utilize multimedia devices in the classroom to access AI tools. Finding information about Chinese culture using AI smart tools.
2. Cultural Exchange Throughout History (10 minutes)
Explore significant historical periods when China engaged in cultural exchange with other regions, such as the Silk Road era and the spread of Confucianism, Buddhism, and other philosophies. 　　Discuss the impact of these exchanges on the development of both Chinese and global cultures. * Utilize multimedia devices in the classroom to access AI tools. Finding information about cultural exchange throughout history using AI smart tools.
3. Modern Cultural Diplomacy (10 minutes)
Examine contemporary efforts by China to promote its culture globally, including initiatives like Confucius Institutes and cultural exchange programs. Discuss the goals and challenges of China's cultural diplomacy and its impact on international perceptions of China.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about modern cultural diplomacy using AI smart tools.

Q&A and Discussion (15 minutes)

Encourage students to ask questions and share their initial thoughts on Chinese culture and its interactions with other cultures.
Lead a discussion on the role of culture in international relations and its potential for fostering understanding and cooperation.
* Utilize multimedia devices in the classroom to access AI tools. Learn by sharing the information you have gathered with your classmates and teachers, and discuss the questions and insights you have generated.

The Second Class (45 minutes)

1. Cultural Influences on China (10 minutes)
    Discuss the impact of globalization on Chinese culture, including the influence of Western media, technology, and consumerism.
    Analyze how China has navigated the preservation of its cultural heritage while embracing global trends.
* Utilize multimedia devices in the classroom to access AI tools. Finding information about cultural influences on China using AI smart tools.

2. Cultural Challenges and Misunderstandings (10 minutes)
    Explore common cultural misunderstandings between China and other cultures, such as communication styles, etiquette, and value systems.
    Discuss the potential consequences of cultural misperceptions in diplomacy and international interactions.
* Utilize multimedia devices in the classroom to access AI tools. Finding information about cultural challenges and misunderstandings using AI smart tools.

3. Cultural Diplomacy in Practice (10 minutes)
    Present case studies of successful and unsuccessful instances of cultural diplomacy involving China and other nations.
    Analyze the impact of cultural exchange programs, art exhibitions, and other initiatives on bilateral relations.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about cultural diplomacy in practice using AI smart tools.

4. Future Trends and Opportunities (5 minutes)

Prompt students to think about the future of cultural interactions between China and the world.

Encourage critical thinking on how cultural diplomacy can be a tool for building bridges and resolving conflicts.

* Utilize multimedia devices in the classroom to access AI tools. Finding information about future trends and opportunities using AI smart tools.

Wrap-up and Reflection (10 minutes)

Summarize the key points discussed in the lesson.

Prompt students to reflect on the importance of cultural understanding in international relations.

Assign a related reading or research assignment for the next class to further deepen their understanding.

*Utilize multimedia devices in the classroom to access AI tools, such as computer, phone, ipad. Summarize what you have learned in class and think about what you will learn in the next lesson.

Appendix C

Learning Achievement Test

Pre-test

Fill in the Blank Questions (4 points each)

1. The headquarters of the United Nations is located in _____ (country)

2. The 2022 Asian Games will be held in _____ (country)

3. The World Trade Organization was established in _____

4. The Communist Party of China was founded in _____

5. The official ideology of the People's Republic of China is based on _____

6. The body that developed from the European Community is _____

7. Historically, the _____ conference clearly recognized Taiwan as part of Chinese territory

8. It is the obligation of Chinese citizens to participate in _____ for 9 years

9. The end point of the ancient land silk road is _____

10. The group organization of advanced youth led by the Communist Party of China is _____

11. The full name of "WTO" is_____

12. The full name of the G20 summit is _____

13. The law with the highest legal status in our country is _____

14. The export value is greater than the import value in a certain period of time is called _____

15. China's fundamental political system is _____

Short answer questions (20 points each)

1. Briefly talk about your views on economic adjustment policies.

2. There have been voices of American hegemony in the world, what do you think?

Pre-test

填空题 (每小题 4 分)

1. 联合国总部位于＿＿＿＿＿＿(国家)

2. 2022 年亚运会在＿＿＿＿＿＿(国家)举办

3. 世界贸易组织成立于＿＿＿＿＿＿年

4. 中国共产党成立于＿＿＿＿＿＿年

5. 中华人民共和国的官方意识形态基于＿＿＿＿＿＿

6. 欧洲共同体发展而来的团体是＿＿＿＿＿＿

7. 历史上＿＿＿＿＿＿会议明确承认台湾是中国领土的一部分

8. 参加 9 年＿＿＿＿＿＿是中国公民的义务

9. 古代陆上丝绸之路的终点是＿＿＿＿＿＿

10. 中国共产党领导的先进青年的群团组织是＿＿＿＿＿＿

11. "WTO"的全称是＿＿＿＿＿＿

12. G20 峰会的全称是＿＿＿＿＿＿

13. 我国具有最高法律地位的法律是＿＿＿＿＿＿

14. 一定时期内的出口额大于进口额被称为＿＿＿＿＿＿

15. 中国的根本政治制度是＿＿＿＿＿＿

简答题 (每小题 25 分)

1. 浅谈一下你对于经济调节政策的的看法。

2. 国际上一直有美国霸权主义的声音，你怎么看待?

Post-test

Fill in the Blank Questions (4 points each)

1. China is following the _____ road

2. The country with the highest GDP in the world in 2020 is _____

3. China was founded in _____

4. In 1999, _____ (region) returned to China

5. Deng Xiaoping established the _____ special zone in Shenzhen

6. 2022 NATO expansion breaks out to _____ war

7. China's fundamental political system is _____

8. Ancient China selecting officials through examinations by _____

9. The basic economic system of the United States is _____

10. The measure of the total value of a country's productive activities over a given period of time is _____

11. The ancient business road connecting China and Asian and European countries is _____

12. The chief architect of reform and opening up is _____

13. In which country will the 2024 Summer Olympics be held _____

14. China pursues a peaceful foreign policy of _____

15. China's basic policy for resolving the Taiwan issue _____

Short answer questions (20 points each)

1. Talk about your views on environmental protection policies.

2. Since the Russo-Ukraine War has received a lot of attention, how do you view the war?
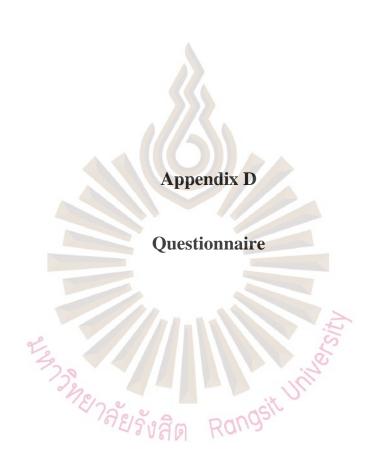
Post-test

填空题 (每小题 4 分)

1. 中国走的是_____道路

2. 2020 年世界上 GDP 最高的国家是_____

3. 中国成立于_____年

4. 1999 年_____(地区)回归中国

5. 邓小平在深圳设立_____特区

6. 2022 年北约扩张爆发了_____战争

7. 中国的根本政治制度是_____

8. 中国古代通过考试选拔官吏的制度是_____

9. 美国的基本经济制度是_____

10. 衡量一个国家在一定时期内生产活动的总值是_____

11. 连接中国与亚欧各国的古代经商的道路是_____

12. 改革开放的总设计师是_____

13. 2024 年夏季奥运会在哪国举办_____

14. 中国奉行_____的和平外交政策

15. 中国解决台湾问题的基本方针_____

简答题 (每小题 25 分)

1. 浅谈一下你对与环境保护政策的的看法。

2. 俄乌战争以来受到很大的关注，你如何看待战争?

Appendix D

Questionnaire

Questionnaire

This is a questionnaire survey to explore the views and satisfaction of year 3 college students in the Situation and Policy course that applied Smart Class with AI. The questionnaire needs to be completed independently, and the respondents need to fill it out carefully and ensure the accuracy.

ID No. _____

Direction:

Please put a tick mark (√) in the brackets.

Mark your level of opinion from 1-5,

* Strongly Agree (SA)-5, Agree (A)-4, Neutral (3)-3, Disagree (DA)-2, Strongly Disgree (SD)-1.

Part A

Item	SA (5)	A (4)	N (3)	DA (2)	SD (1)
1. I am active in the class					
2. I come to every class.					
3. I am not doing anything else in class					
4. I am feeling better about the class atmosphere					
5. I like the activities in the class					

Part B

Item	SA (5)	A (4)	N (3)	DA (2)	SD (1)
1. I learned a lot knowledge in class.					
2. I learn the knowledge from this class is useful					
3. I can learn more knowledge through this method					
4. I learn and memorize directly in the class					
5. It is easy to learn the knowledge for me					

Part C

Item	SA (5)	A (4)	N (3)	DA (2)	SD (1)
1. I am very satisfied with the process of this course					
2. I think I have learned a lot from this course					
3. I will continue to study this course					
4. I feel that this course is important to me					
5. I think I'm a good fit for this class method					

Appendix E

Focus Group Interview Question

Focus group interview

The focus group interview consists of six questions and is divided into three main parts. This article is divided into three parts: Part One, Part Two, and Part Three, discussing the effectiveness of the Smart Class with AI teaching model. The responses of the interviewees are recorded, analyzed, and explained to obtain effective and reliable interview data. In addition, respondents were asked to check whether their transcripts were accurate.

Guidance: Each group consists of five students, with two groups consisting of ten students each. Students are required to answer the following questions about Smart Class with AI in the Situation and Policy course.

Part A: Classroom Activity and Attendance

1. Does the use of Smart Class with AI increase students' motivation in the classroom?

2. Is using Smart Class with AI more confident for you in class?

Part B: Course knowledge learning effectiveness

3. Have you learned about the situation and policies?

4. What do you think Smart Class with AI can bring you?

Part C: Self perception and satisfaction

5. Will using Smart Class with AI teaching method increase your satisfaction with the teaching of the course?

6. Can you feel the role of Smart Class with AI in the situation and policy classroom?

Appendix F

Experts (Validated Research Instruments)

	Name	Position/Title	Institutes
1	Wei Wang	Professor	Nanchang Institute of Technology
2	Yanyan Li	Associate Professor	Nanchang Institute of Technology
3	Bo Li	Lecturer	Nanchang Institute of Technology

Appendix G

Ioc of Lesson Plans

Item No	Expert 1	Expert 2	Expert 3	Average	IOC
Lesson plan 1	+1	+1	+1	+1	Congruence
Lesson plan 2	+1	+1	+1	+1	Congruence
Lesson plan 3	+1	+1	+1	+1	Congruence
Lesson plan 4	+1	+1	+1	+1	Congruence
Overall Average	+1				Congruence

Note:

Expert 1: Wei Wang   (Professor)

Expert 2: Yanyan Li   (Associate Professor)

Expert 3: Bo Li   (Lecturer)

Appendix H

Ioc of Achievement Test

Research Objectives:

To compare the learning achievement in Situation and Policy course before and after applying Smart Class with AI by year 3 university students in China.

Fill in the Blank Questions: 1-15 ;   Short answer : 16-17

Pre Test:

No.	Item	Expert 1	Expert 2	Expert 3	Average	IOC
1	Fill in the Blank 1	+1	+1	+1	+1	Congruent
2	Fill in the Blank 2	+1	+1	+1	+1	Congruent
3	Fill in the Blank 3	+1	+1	+1	+1	Congruent
4	Fill in the Blank 4	+1	+1	+1	+1	Congruent
5	Fill in the Blank 5	+1	+1	0	+0.75	Congruent
6	Fill in the Blank 6	+1	+1	+1	+1	Congruent
7	Fill in the Blank 7	+1	+1	+1	+1	Congruent
8	Fill in the Blank 8	+1	+1	+1	+1	Congruent
9	Fill in the Blank 9	+1	+1	+1	+1	Congruent
10	Fill in the Blank 10	+1	+1	0	+0.75	Congruent
11	Fill in the Blank 11	+1	+1	+1	+1	Congruent
12	Fill in the Blank 12	+1	+1	+1	+1	Congruent
13	Fill in the Blank 13	+1	+1	+1	+1	Congruent
14	Fill in the Blank 14	+1	+1	+1	+1	Congruent
15	Fill in the Blank 15	+1	+1	+1	+1	Congruent
16	Short answer 1	+1	+1	+1	+1	Congruent
17	Short answer 2	+1	+1	+1	+1	Congruent
Overall Average		+0.970				Congruent

Post Test:

No.	Item	Expert 1	Expert 2	Expert 3	Average	IOC
1	Fill in the Blank 1	+1	+1	+1	+1	Congruent
2	Fill in the Blank 2	+1	+1	+1	+1	Congruent
3	Fill in the Blank 3	+1	+1	+1	+1	Congruent
4	Fill in the Blank 4	+1	+1	+1	+1	Congruent
5	Fill in the Blank 5	+1	+1	+1	+1	Congruent
6	Fill in the Blank 6	+1	+1	+1	+1	Congruent
7	Fill in the Blank 7	+1	+1	+1	+1	Congruent
8	Fill in the Blank 8	+1	+1	+1	+1	Congruent
9	Fill in the Blank 9	+1	+1	+1	+1	Congruent
10	Fill in the Blank 10	+1	+1	+1	+1	Congruent
11	Fill in the Blank 11	+1	+1	+1	+1	Congruent
12	Fill in the Blank 12	+1	0	+1	+0.75	Congruent
13	Fill in the Blank 13	+1	+1	+1	+1	Congruent
14	Fill in the Blank 14	+1	+1	+1	+1	Congruent
15	Fill in the Blank 15	+1	+1	+1	+1	Congruent
16	Short answer 1	+1	+1	+1	+1	Congruent
17	Short answer 2	+1	+1	+1	+1	Congruent
Overall Average			+0.985			Congruent

Appendix I

Ioc of Questionnaire And Interview

No.	Item	Expert 1	Expert 2	Expert 3	Average	IOC
Part A						
1	1. I'm active in the class	+1	+1	+1	+1	Congruent
2	2. I come to every class.	+1	+1	+1	+1	Congruent
3	3. Not doing anything else in class	+1	+1	+1	+1	Congruent
4	4. Feeling better about the class atmosphere	+1	+1	0	+0.75	Congruent
5	5. I like the activities in the class	+1	+1	+1	+1	Congruent
Part B						
6	1. I learned a lot knowledge in class.	+1	+1	+1	+1	Congruent
7	2. The knowledge from this class is useful	+1	+1	+1	+1	Congruent
8	3. I can learn more knowledge through this method	+1	+1	+1	+1	Congruent
9	4. Learn and memorize directly in the class	+1	+1	+1	+1	Congruent
10	5. It is easy to learn the knowledge	+1	+1	+1	+1	Congruent
Part C						
11	1. I'm very satisfied with the process of this course	+1	+1	+1	+1	Congruent
12	2. I think I have learned a lot from this course	+1	+1	+1	+1	Congruent
13	3. I will continue to study this course	+1	+1	+1	+1	Congruent
14	4. I feel that this course is important to me	+1	+1	+1	+1	Congruent
15	5. I think I'm a good fit for this class method	+1	0	+1	+0.75	Congruent
Overall Average		+0.966				Congruent

Biography

Name	Jiabei Tang
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