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From the Popularization of Guzheng to Explore the Source of National Music

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Abstract: Guzheng is a traditional Chinese musical instrument, because of its classical charm and national characteristics, is regarded as the most Chinese national characteristics. Under the background of multicultural development, guzheng, as an important component of traditional Chinese musical instruments, has set off a "national guzheng tide", and guzheng has become more popular at home and abroad. Based on this, this paper takes the perspective of the popularization of guzheng, studies the music culture connotation of guzheng and the source of national music, first clarifies the origin and development of guzheng, then analyzes the improvement of guzheng instrument and the dissemination of guzheng music, and finally puts forward the thoughts and suggestions on the popularization of guzheng in the new period for reference.

Keywords: Guzheng; popularization; musical instrument improvement

1. INTRODUCTION

Zheng is a kind of plucked instrument with remarkable Chinese national characteristics. It was popular in the Qin Dynasty (now Shaanxi and Gansu province) more than 2,500 years ago, so it is also known as "Qin Zheng". After the Qin dynasty unified the Central Plains, Zheng quickly became popular throughout the country, and became the representative instrument of court music and folk music. Under the background of globalization, guzheng has attracted the attention of a group of music lovers at home and abroad, and has been rapidly popularized. Keeping up with the development of The Times, keeping up with the tide of globalization, improving the guzheng on the basis of retaining Chinese characteristics, and making the guzheng adapt to the development of the new era. As a representative of traditional Chinese Musical Instruments, Guzheng needs to adhere to integrity and innovation, on the basis of highlighting the characteristics of Chinese music, actively embrace other cultures, connect with the development of The Times, and provide impetus for the development of Chinese zheng in the world music culture.

2. THE ORIGIN AND DEVELOPMENT OF GUZHENG

2.1 The origin of the zheng

At present, the earliest written records of the zheng are found in the biography of Li Si in the Historical

Records. "Fu beat the arrow, plays the zheng, and the song and ears, the voice of the true Qin Dynasty."Zheng was first spread in the Qin Dynasty, with the unification of the six states, zheng this Qin instrument began to be popular in the Central Plains. The written record of the Zheng means that Li Si took the instrument as an example to the First Emperor of Qin to revoke the order of the expulsion of guests [1]. The biography of Li Si tells the history of 237 BC, which can be judged that zheng was popular in the Qin state, or earlier than 237 BC.



Figure 1 The Shape and System of the Early Guzheng

2.2 The origin of the zheng

The ancient literature "General Benefit of Han Customs", "Customs" and "Old Tang Book · Music Records" recorded "Meng Tian made zheng", these records can be used to explore the origin of zheng. Many scholars in the academic circle are opposed to the statement "Meng Tian made zheng". The earliest document "Meng Tian made zheng" recorded "today, Liangtwo zheng shape, I do not know who changed it. Or it was made by Qin Mengtian."This record is ambiguous, lack of evidence to support; there is also recorded in the "Old Book of Music", music."It can be judged from the mention and description of the instrument in the Biography of Li Si that the people of Qin have become accustomed to the instrument, and the spread of an instrument needs time and the improvement of the music craftsman to become more and more perfect. Meng Tian was born in 259 BC, which is too short from 237 BC, when the zheng was already popular, so it is not credible [2]. In addition to "Meng Tian made zheng" said, "fighting for zheng" said has been widely recognized. The Records of the Grand Historian quoted: "The Great envoy plain female drum 50 strings. Sadorrow, the emperor banned, break its pride for twenty-five strings."It is said that the Yellow Emperor ordered the fairy Su E to divide the fifty strings into two, take twenty-five strings zheng [3]."Yin Lu" also recorded: "Zheng, Qin Le also. The flow of the piano. Guse fifty strings.... two again. The name of the zheng begins here."Although there is still a lack of key historical

confirmation, but about the origin of zheng discussion has subtly influenced the subsequent development of zheng [4].

2.3 Evolution and development of traditional zheng

Zheng early shape with five strings, can be regarded as the ancients influenced by the "five tones" "five elements", and with the passage of history, the pre-qin period of the zheng gradually developed to the han dynasty twelve strings, because the zheng this instrument can satisfy the Chinese court music string rule, zheng become common court playing instruments popular in the aristocracy. Jin period Fu Xuan "Zheng Fu preface" wrote: "today will view its device, like the sky, the flat, hollow quasi liuhe; string column in December." In the Wei Dynasty, Ruan Yu wrote in her Ode to Zheng: "The body is six feet long, and you should be counted. Strings are twelve degrees, four degrees also." According to the relevant literature, the zheng in the Han and Wei dynasties was about six feet long. The upper part of the zheng was in a round arch, and the lower part was in a flat shape, with twelve strings and twelve columns, each of which was three feet high. This twelve-string zheng has been spread to the Sui and Tang dynasties [5].

The Sui and Tang Dynasties were the heyday of the development and popularity of Guzheng. Zheng music was widely spread among the people, especially after the rule of Zhenguan, the political stability and cultural prosperity of the Tang Dynasty, which made zheng further spread among the people. In the Tang Dynasty, Du You wrote a note: "There are two strings with ten music zheng, and he has ten music with three strings." As can be seen, in the Sui and Tang dynasties, in addition to the twelve string zheng, there were also thirteen string instruments. Not only that, the Tang Dynasty also produced thirteen string zheng music score, with "one, two, two, four, five, six, seven, eighty, ninety dou as the towel", thirteen signs of the string order score to record the pitch. With the policy of opening to the outside world in the Tang Dynasty and the smooth flow of the Silk Road, zheng gradually spread and became popular in Southeast Asia and other countries due to its excellent shape and moving timbre.

The Song Dynasty was the heyday of zheng in the development of folk music. For example, "The founding of the legacy music, white ling flying to the thirteen strings" and other poems are the excellent description of zheng. In the Song and Yuan dynasties, in order to meet the artistic needs of different classes,

14 and even 15 string zheng gradually emerged. The artistic expression of zheng was greatly enhanced, and zheng families such as Guan Hanqing and Zhang Yuqing were born successively, which had a positive influence on the development of zheng music [6]. In the Ming and Qing dynasties, the sixteen string zheng was developed on the basis of the fifteen string zheng, and in the late Qing Dynasty, the shape of the zheng was unified into the sixteen strings. The zheng in Lingnan area innovatively used copper wire as the zheng string, and made the breakthrough of the silk zheng string used for more than two thousand years, and the timbre is more flexible and changeable.

1.4 Evolution and development of modern zheng

Modern zheng can be divided into two parts: innovation zheng and transfer zheng, especially the promotion of industrialization, the guzheng has carried out various reforms, from the shape, materials and the number of strings have produced innovation. Compared with the traditional zheng, the expressive force of the timbre, vocal range and shape of the modern guzheng have been greatly developed. Since the 21st century, the rapid development and popularization of guzheng art has further driven people's demand for guzheng. More and more guzheng merchants have begun to make innovations in the shape and chord system, such as S-shaped guzheng, etc. Among them, the improvement of guzheng by the Central National Orchestra is the most representative, and the improvements include:

- (1). Add the guzheng to 15 strings.
 - (2). Shorten the zheng body, determine the length of the zheng body is fixed 156 cm, beat the bottom plate of the zheng, the string length between the two mountain passes increased to 123 cm.
 - (3). In order to improve the sound quality and timbre of zheng, the researchers focused on the way of zheng string, referring to the making method of pipa and other orchestral instruments, and made a new resonance box on the basis of the original zheng, and the sound quality of zheng has been significantly improved. On the basis of 15 string guzheng, 18 string guzheng was developed, and the musical expression of guzheng was greatly enhanced by [7].
- In the 1960s, a significant breakthrough was made in the shape of the guzheng. A number of guzheng players jointly explored the key points of the improvement of the shape. On the basis of the 18th string zheng, the 21 string nylon wrapped zheng was developed.

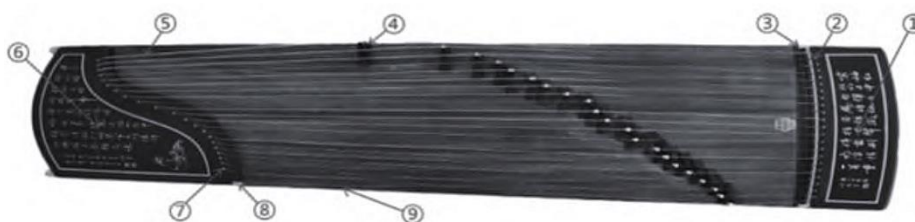


Figure 2 Twenty-one string guzheng structure (① zheng head ② front string hole ③ front mountain ④ piano code ⑤ string ⑥ zheng tail ⑦ back string hole ⑧ rear mountain ⑨ panel.

In addition to the improvement of shape and system, many guzheng players are also committed to the innovation of the function of zheng. Among them, the representative "butterfly Zheng" is about "changing the music system". Its creator is He Baoquan, professor of the Department of Folk Music of Shanghai Conservatory of Music. Mr. He Baoquan began the development of the butterfly zheng in 1965, and completed the improvement of the new zheng in 1976, which was named "butterfly zheng" because it

resembles a butterfly. Butterfly zheng from the appearance of the very much like two zheng stitching together, but share a resonant. Compared with the traditional guzheng, the butterfly zheng adds the changing tone and sets up the piano hook. This allows the fourth one to retain the characteristics of the traditional zheng five tones without the help of a mechanical device, enabling the player to play the changing tone directly with his hand.

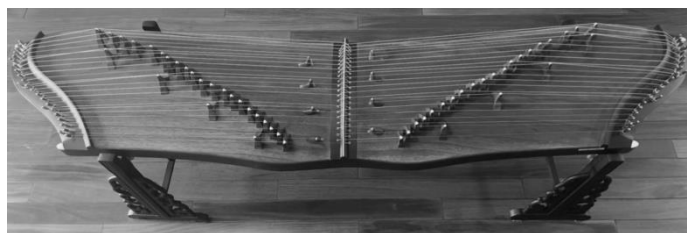


Figure 3 Butterfly Zheng

3. THE IMPROVEMENT OF GUZHENG INSTRUMENTS AND THE DISSEMINATION OF ZHENG MUSIC

3.1 Chinese music musical instruments and communication problems

Chinese culture is extensive and profound, and has a long history. As a representative component of Chinese music culture, the creation, dissemination and popularization of guzheng have an inseparable relationship with the national instrumental music culture. The spread of music and Musical Instruments is directly related to the development of culture. The development of different ethnic groups and regions in China is different, which makes the communication forms of guzheng in different regions in China also different. The music phenomenon of Chinese music communication cannot be separated from the inheritance of culture and the horizontal reference of music itself. According to the development law of music culture, a rich and colorful music culture is born from the process of music generation, communication, reference to integration. Guzheng and other music can be widely spread in the Central Plains, which is itself the result of the interaction between music and culture. According to the external dissemination and development of guzheng, the cultural resources of Chinese music are an effective method to inherit and in-depth study of traditional music.

3.2 Current status and analysis of overseas communication and popularization of guzheng

As early as the Sui and Tang Dynasties, zheng spread to neighboring countries as a beautifully made handicraft, and had a profound influence on the music culture of other countries. For example, Zheng was called "Yoga" in Mongolia, "Gayageum" in Korea, and "Shorqin" in Japan. Since the founding of

the People's Republic of China, foreign exchanges have been close, and cultural exchanges between China and foreign countries have become increasingly frequent. The popularity of guzheng at home and even at abroad must retain the tradition on the basis of conforming to the internationalization of Musical Instruments. Chinese music and guzheng culture have been widely spread in Malaysia, and many musicians play traditional Malaysian music in the form of guzheng. Especially after the establishment of diplomatic ties between China and Malaysia, the Malaysian people have become more active in understanding and learning guzheng, and guzheng has been significantly popularized in Malaysia: most Chinese schools establish Chinese orchestras, and the proportion of Chinese orchestras is relatively high. In terms of the establishment of professional institutions, the professional popularity of Singapore guzheng is higher. Since 1990, China's Central Conservatory of Music in Beijing has reached a cooperation with Singapore Nanyang Institute of Arts. The music grading system and traditional instrumental music of Beijing Central Conservatory of Music were introduced into Singapore and Malaysia. Malaysia has recognized Chinese traditional music [8] from the professional level under the introduction of the overseas grading system of China Music. Compared with Malaysia, the development and popularity of guzheng music in Singapore is more obvious, which is related to the policy preference of the Singapore government paying more attention to art cultivation. At present, Singapore has put forward many policies in the economic subsidy of Chinese Music, thus the development of guzheng music. Singapore music universities have introduced a group of guzheng players and professional guzheng teachers in the

design of guzheng music teaching institutions and professional bands. The popularization and development of Chinese music in Singapore is extremely significant.

Japan is more influenced by the guzheng music culture. As early as the Sui and Tang Dynasties, the thirteen string zheng was introduced to Japan, and the instruments used as accompaniment sound were used in the court music. It was not until the Heian era of Japan that zheng was recognized by the public as a musical instrument. After the demise of peace, a large number of Musical Instruments and scores used by the court were introduced to the people, and the public began to be truly familiar with zheng music. In general, after the introduction of China's thirteen Xi'an zheng into Japan, it roughly experienced three development periods of "Le zheng, building purple zheng and common zheng". Guzheng changed from court music playing Musical Instruments to Musical Instruments used in Buddhist performance, which was popularized to the folk, and a variety of guzheng forms appeared in this process. However, no matter how to develop the improved zheng, the thirteen Xi'an zheng still occupies the leading position in the Japanese guzheng. The Japanese zheng music works have always retained the national flavor of Japan itself and the timbre characteristics of the thirteen Xi'an zheng.

To sum up, guzheng, as an instrument with obvious Chinese characteristics, has been recognized by international musicians in the process of innovation and development of zheng music, and shows the charm of Chinese music culture on the international music stage, and has been fully developed and popularized at home and abroad with its fresh and elegant image. In the popularization of guzheng, strengthen the innovation of zheng music, so that the performance and creation of guzheng on the basis of retaining the music culture of other countries and nations, and become the real "Oriental piano".

4. THOUGHTS AND SUGGESTIONS ON THE POPULARIZATION OF GUZHENG IN THE NEW PERIOD

4.1 Music reform standards and promotion

As a traditional Chinese orchestral instrument, the inheritance, development and popularization of guzheng in the new era cannot be separated from the reform of musical instrument. In the first national guzheng art exchange meeting, the host Chen Anhua put forward his view of the development of guzheng, he thinks the traditional instrument embodies our country in a historical period of science and technology and music level, in the process of the new era, in order to adapt to the era development need to improve musical instrument innovation. The book "Improvement and Innovation and Industrial Design of Folk Music" puts forward a basic requirement for the improvement of traditional Musical Instruments represented by guzheng. "The reform of Musical

Instruments must respect the history and the tradition, and highlight the national culture, improve the sound effect and facilitate the performance of Musical Instruments.[9] The popularity of "guzheng, a traditional Chinese instrumental music, cannot be separated from the popularization and development of local opera and folk art. Local cultural differences make certain differences in the performance and use of guzheng in different regions. At the beginning of the 20th century, in order to realize the systematization of the reform and popularization of Musical Instruments, some guzheng musicians proposed to improve the rhythm and sound range of guzheng, unify the performance standards, so that the single-room instrument can play the maximum effect in solo and band ensemble. In the aspect of big band ensemble and diversified popularization, the primary problem to be solved is the free conversion of guzheng. At present, whether it is multi-sound zheng or butterfly zheng, the popularity in the market is relatively low, and the application in the big band ensemble is less. In the current era of "national guzheng craze", the number of people learning guzheng in the country has exceeded 200,000, and the successors and learners of some improved zheng in China are only a few thousand. In order to further promote the continuous popularization of guzheng at home and abroad, it is necessary to solve the problems encountered in the improvement of guzheng, connect with the changes of The Times and the changes of the music needs of viewers, and boost the new development of guzheng in the new era.

4.2 Maintain the national personality under the popularity of zheng music

National instrumental music is a concrete embodiment of national culture and national music spirit. The instrument is directly related to Chinese music culture, and can be regarded as an aesthetic symbol to highlight Chinese aesthetic character. Under the background of the new era, guzheng is not only the representative of ancient Chinese instrumental music, but also a modern national instrumental music as a "new music". This means that the national instrumental music represented by guzheng carries the comprehensive development of multiple cultures and highlights the diversified orientation of Chinese music culture. As a remarkable symbol of modernization, diversification is the only way for guzheng to inherit and popularize in modern society. From the perspective of functional attributes, the shape and structure of a musical instrument determine its playing method and style. The shape and system characteristics of the guzheng instrument itself determine the imbalance between the left and right vocal range in the performance process. Under the limitation of this shape and system, the foundation of "the sound with the right hand and the rhyme with the left hand" needs to be the basis of the popularization of guzheng, which is the fundamental

embodiment of different zheng music schools. The structure arrangement of zheng music "Ink Painting" (see Table 1 for details) fully reflects the development technique of traditional Chinese music. In the two parts of adagio and allegro, it is basically composed of two unequal musical phrases. In particular, the first stage of the piano four-tone group

creates the elegant temperament of traditional Chinese ink painting, which can be regarded as an innovative representative in the popularization of guzheng, and reflects the Chinese music style [10] in the process of integration and development with other cultures.

Table 1 The structure of Ink Painting

primary structure	an actor's opening words	lento				linkage
second-level structure		rise	bear	change	close	
Subsection number	7+14	5+4	4+6	4+5	4+4+5	7
Melody material		A	B	C	D	
Melody tonality		A Hui turns to D Palace	A Hui turns to D Palace	D palace	A emblem	
primary structure	allegro					Coda
second-level structure	lead into	rise	bear	Turn (expand)	Together (reproduced)	
Subsection number	4	4+6	4+4	13+19	18+13+9	13
Melody material		E	F	G	D+E+A	
Melody tonality		D palace	A Hui turns to D Palace	D palace	A Hui turns to D Palace	

4.3 Seek common ground while reserving differences and musical identity

The improvement of guzheng and the diversified development of zheng music are natural phenomena in the popularization process of guzheng. Its purpose is to seek market recognition and music recognition, while generally seeking music recognition will naturally get the market recognition. Modern cultural identity is consistent with the essential concept of music identity. With the development of The Times and social changes, the "music identity" in the popularization process of guzheng also poses more diverse challenges. As a representative national instrument in China, guzheng has the characteristics of originality and variability, which shows the artistic root of "heart" and "tao", and we must take seeking common ground while reserving differences as the basic principle of the development of guzheng. In the current era, guzheng has begun to popularize [11] in the international direction, whether in terms of musical instrument shape or the creation of zheng music. In the internationalization and popularization of guzheng, the essence of traditional Chinese music culture should be retained, and the advanced parts of other countries and national cultures should be absorbed to promote the long-term development of guzheng.

TAG:

To sum up, as a representative traditional national

instrument in China, guzheng has been loved by many music lovers at home and abroad because of its unique timbre and shape characteristics. As an important part of the national music system, guzheng has gradually grown and popularized under the efforts of many musicians and guzheng artists. Under the background of the new era, the popularity of guzheng cannot be separated from the "integrity" and "innovation" of Musical Instruments. It is an important content of the popularity of contemporary guzheng, considering the standard and promotion of the music reform, the maintenance of the national personality, the pursuit of common differences and music recognition.

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A Semiotic Interpretation of the Domestic Animated Film "Ne Zha 2"

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Abstract: From the perspective of semiotics, this paper conducts an in-depth analysis of various symbols in the film *Ne Zha 2*, including characters, artifacts, scenes, and cultures. By integrating theories such as Ferdinand de Saussure's structuralist semiotics, Charles Sanders Peirce's triadic sign model, and Roland Barthes' mythology, it reveals the process of meaning construction in the film through symbolic encoding. It explores the themes, cultural connotations, and ideologies conveyed behind it, and demonstrates how the film, in the collision between traditional mythology and modern culture, utilizes the symbol system to trigger emotional resonance and in-depth thinking among the audience.

Keywords: Semiotics; *Ne Zha 2*; Meaning Construction; Cultural Expression; Ideology

1. INTRODUCTION

As a comprehensive art form, film contains a rich system of symbols, which carry the intentions of creators, cultural connotations, and values. The film *Ne Zha 2*, as a domestically produced animated film with wide influence, on the basis of continuing the wonderful story of its first installment, further constructs a narrative world full of depth and tension through the application of diverse symbols. Analyzing it by using semiotic theories helps us to have a deeper understanding of the film's themes, cultural significance, and the underlying ideologies, and reveals how the film communicates with the audience through symbols and triggers emotional resonance and social reflection.

2. OVERVIEW OF SEMIOTIC THEORIES

Zhao (2018)[4] mentioned that the commonly accepted definition of semiotics in the West is that "semiotics is the study of signs." Semiotics is a discipline that studies sign systems and the laws governing the generation and dissemination of meaning. Its aim is to reveal the deep meanings and cultural connotations hidden behind signs. In the field of film analysis, semiotics provides a unique perspective and methodology for interpreting films.

2.1 Structuralist Semiotics by Saussure

Structuralist semiotics, put forward by the Swiss linguist Ferdinand de Saussure, defines a sign as a combination of the signifier and the signified (Li, 2021) [1]. The signifier is the material form of the sign, while the signified is the abstract concept or meaning represented by the signifier. For example, in linguistic signs, the pronunciation or written form of the word

"tree" is the signifier, and the concept of the plant that it represents is the signified. Saussure emphasized the arbitrariness of signs, that is, the relationship between the signifier and the signified is not inevitable but is established by social and cultural conventions. This theory provides a basis for analyzing how various sign elements in movies are endowed with specific meanings and helps us understand how filmmakers construct meaning systems through signs [2].

2.2 Peirce's Triadic Sign Model

The American philosopher Charles Sanders Peirce proposed a triadic classification of signs into iconic signs, indexical signs, and symbolic signs: Iconic signs convey meaning through similarity to their referents, such as character appearances or prop designs in films, which signify through visual or structural resemblance. Indexical signs establish a causal or spatiotemporal connection with their referents, indicating or implying specific objects or situations—for example, clue props or environmental changes in films that signal plot developments. Symbolic signs derive meaning from socio-cultural conventions and associations, often carrying deep cultural, emotional, or social significance, such as specific symbols or colors in films that evoke shared ideological meanings. Peirce's triadic model offers a clear framework for dissecting the different types and functions of cinematic signs in detail.

2.3 Roland Barthes' Mythological Theory

French scholar Roland Barthes conceptualized myth as a second-order semiotic system. In the first-order system, a signifier combines with a signified to form a meaningful sign; in the second-order system, this meaningful sign itself becomes a new signifier, recharged with broader socio-cultural meanings to become a myth (Xu & Zhao, 2024) [3]. For instance, a simple object can, through cultural and social processes, transform into a mythic symbol representing certain values or social phenomena. Barthes' theory helps us reveal how signs in films are imbued with deeper ideological and socio-cultural connotations, and how films use signs to convey specific values and ideological messages.

3. CHARACTER SYMBOLS: THE CONCRETE REPRESENTATION OF IDENTITY DILEMMA AND POWER GAME

3.1 *Ne Zha*: The Identity Transformation from a Rebel to an Insider of the System

In *Ne Zha 2*, Ne Zha's identity as a Demon Pill remains a core symbolic sign. Examined from the

perspective of Ferdinand de Saussure's structuralist semiotics, the Demon Pill, as a signifier, has a deeply ingrained connection with the signified concepts of "evil and dangerous" within the cognitive systems of the residents of Chentang Pass and the Heavenly Court. The arbitrariness of this symbolic meaning does not form naturally but stems from the construction of the social power structure and collective consciousness. Since its birth, the Demon Pill has been labeled as "ominous" and has become a heterogeneous threat in the eyes of the maintainers of the Heavenly Court's order. This prejudice is continuously strengthened through group discourse and evolves into a social collective unconsciousness.

Although in the first film, Ne Zha breaks the prejudice with the heroic act of sacrificing himself to save the world, proving that the body of the Demon Pill also harbors a pure heart, the lagging nature of the symbolic system makes it difficult to eradicate the stereotype that "the Demon Pill represents evil." In the sequel, the instinctive fear of the power of the Demon Pill among the people of Chentang Pass and the continuous vigilance of the Heavenly Court against the lingering influence of the Demon Pill both confirm the tenacity of the symbolic meaning, reflecting the exclusion mechanism of the social cognitive system towards the identity of the "other."

The mark of the Demon Pill on Ne Zha's forehead, as an iconic sign (according to Charles Sanders Peirce's triadic sign model), intuitively demonstrates his special identity. It is both a medal of Ne Zha's resistance against fate, representing his spirit of breaking free from prejudice, and a new brand of oppression. After he is recruited by the Heavenly Court, this mark implies that he is still bound by his identity and it is difficult for him to get rid of the discipline imposed by the system. From the perspective of Roland Barthes' mythological theory, Ne Zha's transformation from a Demon Boy to being accepted by the Heavenly Court is a process of myth construction. The rebellious image of "My fate is determined by myself, not by the heavens" is recoded by the power system of the Heavenly Court, incorporated into the official order, and endowed with new social and cultural meanings.

3.2 Ao Bing: The Contradiction and Struggle Between a Divided Subject and Ethnic Responsibility

In *Ne Zha 2*, Ao Bing remains trapped in the dilemma of identity fragmentation, with his character emerging as a contradictory nexus of multiple symbols. From the perspective of Saussurean semiotics, his ice-blue battle armor (the signifier) symbolizes both the nobility and purity of the Spirit Pearl's reincarnation (the signified) and the deep-seated desire of the underwater dragon clan to break free from heavenly rules, which are inseparable from the mission imposed by his ethnic group. This contradictory symbolic connection reflects Ao Bing's difficult choice between moral principles and ethnic responsibilities. His

costume design is highly symbolic: the lightweight white gauze he wears externally acts like a mask, crafting the image of a gentle and elegant disciple of the celestial sect, aligning with others' perfect imagination of the "Spirit Pearl"; beneath it, the cold and hard dragon scale armor silently narrates the tragic experience of the dragon clan in the underwater purgatory. This dichotomy between appearance and reality in his attire mirrors his divided self-cognition—the "good" image constructed under external gaze versus the true self overwhelmed by ethnic missions, forming a stark conflict.

According to Peirce's triadic sign model, Ao Bing's appearance serves as an iconic sign, visually embodying the contradiction of his identity: the gentle celestial demeanor in human form and the ferocious dragon scales in draconic form constitute a visual paradox of being "half-human, half-dragon." In the view of Roland Barthes' mythology, Ao Bing's character symbol undergoes second-order coding by power discourses: the Heavenly Court constructs him as a "model of demon assimilation," stripping away the contradictions of his dragon-clan identity to make him an ideological signifier for justifying celestial order; the dragon clan, in turn, symbolizes him as the "hope for ethnic revival," completing a symbolic resistance against mainstream power through ritualistic construction. Both groups "de-historicize" his real predicament, reducing Ao Bing to a meaningful carrier for different power blocs to legitimize their arguments, thus revealing the essence of mythology as a hidden tool of ideology.

3.3 Shen Gongbao: The Power Aspiration and Identity Anxiety of a Marginal Figure

Shen Gongbao's complex attitude towards the Green Token of Yuxu Palace serves as a symbol full of irony. From the perspective of Ferdinand de Saussure's structuralist semiotics, the Green Token of Yuxu Palace, as a signifier, is closely linked to the signified concepts of "power and recognition" in Shen Gongbao's cognition, and this semantic connection is bestowed by the social culture. This symbol not only satirizes the interest exchanges behind the immigration policies in reality but also implies the awkward positioning of certain countries within the hegemonic system, where they are both oppressed and compelled to participate in the chain of oppression.

As a marginal figure, Shen Gongbao's pursuit of the Green Token of Yuxu Palace is essentially a yearning for power and recognition, and behind this yearning lies a profound sense of identity anxiety. According to Charles Sanders Peirce's triadic sign model, Shen Gongbao's stuttering characteristic, as an iconic sign, to some extent reflects his inner anxiety; his actions centered around the Green Token of Yuxu Palace, as indexical signs, point to his pursuit of power. From the perspective of Roland Barthes' mythological theory, Shen Gongbao's story constructs a myth about the struggles of marginal figures within the power system,

revealing the contradictions and struggles of marginal groups in the social hierarchy during their pursuit of power, as well as the inequality of the power system.

4. ARTIFACT SYMBOLS: CARRIERS OF CULTURAL INHERITANCE AND POWER SYMBOLISM

4.1 The Qiankun Circle: The Dialectical Unity of Freedom and Restraint

In the first film, the Qiankun Circle symbolizes the restraint imposed on Ne Zha. From the perspective of Ferdinand de Saussure's structuralist semiotics, the form of the Qiankun Circle (the signifier) is associated with "restriction and constraint" (the signified), and this meaning is bestowed within the narrative of the film. Philosophically, it can be interpreted as the materialized manifestation of Jean-Paul Sartre's "situational freedom." The process in which Ne Zha learns to control the tightness of the Qiankun Circle is as if he is touching upon the core proposition of existentialism, that is, the possibility of an individual seeking freedom within a given situation. However, this seemingly autonomous choice may actually contain an ideological crisis, because it may be a game of options carefully designed by the power system, implying that when an individual pursues freedom, it is still difficult to get rid of the potential control of power.

Analyzed from Charles Sanders Peirce's triadic sign model, the Qiankun Circle, as an iconic sign, intuitively gives people a sense of restraint with its circular appearance; the changes in its state in different plots (such as the degree of tightness) serve as indexical signs, suggesting the changes in the relationship between Ne Zha and power. The artifact symbol of the Qiankun Circle, through the transformation of its function and meaning, profoundly demonstrates the complex dialectical relationship between freedom and restraint. At the same time, it also reflects the process of the re-encoding of the symbolic meaning in Roland Barthes' mythology, transforming from a simple symbol of restraint into a symbol of the game between freedom and control.

4.2 The Tianyuan Cauldron: A Symbolic Metaphor of the Power Order

Although the patterns on the Tianyuan Cauldron have been misinterpreted as the symbol of the US dollar by some audiences, from the perspective of traditional Chinese culture, they are more likely to originate from the patterns on bronze wares or the symbols of Taoist ritual instruments. According to Ferdinand de Saussure's structuralist semiotics, the connection between the shape and patterns of the Tianyuan Cauldron (the signifier) and the meanings of "power and order" (the signified) is based on the symbolic conventions in traditional culture.

In the film, the Tianyuan Cauldron is highly likely to symbolize the maintenance of a certain power or order. As an important artifact symbol, it witnesses the

struggles and maintenance of power and order among various forces in the story, reflecting the operational mechanism of the power structure in the film and the cultural connotations behind it. From the perspective of Charles Sanders Peirce's triadic sign model, the appearance of the Tianyuan Cauldron, as an iconic sign, conveys the characteristics of power with its solemn and majestic shape; its appearance and function in the plot, as indexical signs, imply the changes in the power pattern.

The application of the symbol of the Tianyuan Cauldron reflects the film's reference to and transformation of traditional cultural symbols. By integrating these symbols into the film's narrative and meaning expression, it constructs a myth about power and order, which is in line with the process of symbol construction of cultural meaning in Roland Barthes' mythological theory.

4.3 The Jade Tablet of Yuxu Palace: Cultural Misinterpretation and Symbolic Tracing

Some audiences interpret the Jade Tablet of Yuxu Palace as an "American green card." However, upon in-depth analysis of its shape and function, it is found that it is more akin to the "token" in traditional Chinese culture. From the perspective of Ferdinand de Saussure's structuralist semiotics, there is an internal connection between the appearance and function of the Jade Tablet of Yuxu Palace (the signifier) and the symbols of power and identity markers (the signified) in traditional Chinese culture. This semantic connection originates from the symbolic system of traditional culture.

The eagle-shaped pattern on the Jade Tablet is actually a variation of the "Mysterious Bird" totem in ancient China. This misinterpretation reflects the possible deviations in the symbolic meanings during the process of cross-cultural communication and interpretation. Through the symbolic tracing of the Jade Tablet of Yuxu Palace, we can better understand the inheritance and innovation of traditional cultural symbols in the film, as well as how to endow it with new meanings in the modern context.

From the perspective of Charles Sanders Peirce's triadic sign model, the shape and pattern of the Jade Tablet, as iconic signs, possess unique cultural identification. Its role in the story (such as identity authentication and a symbol of power), as indexical signs, drives the development of the plot. The application of the symbol of the Jade Tablet demonstrates the ingenuity of the film in handling cultural symbols. It not only retains the essence of traditional culture but also triggers the audience's thinking about the symbolic meanings, which is consistent with the characteristics of the evolution of symbolic meanings in cultural communication in Roland Barthes' mythological theory.

5. SCENE SYMBOLS: THE EXPRESSION OF SPATIAL NARRATIVE AND IDEOLOGY

5.1 The Heaven's Tribulation Memorial Hall: The

Appropriation of Simulacrum and Ideology

The Heaven's Tribulation Memorial Hall is essentially a simulacrum device criticized by Jean Baudrillard. It transforms Ne Zha's real resistance movement into a symbolic landscape for consumption. The slogan "My fate is determined by myself, not by the heavens," which was once full of rebellious spirit, has been appropriated by the system and reduced to a piece of self-help chicken soup, losing its original critical and revolutionary nature. From the perspective of Roland Barthes' mythological theory, the Heaven's Tribulation Memorial Hall conducts a second-order coding of Ne Zha's resistance symbols, making them new ideological tools.

In this scene, the architectural style and display content of the memorial hall (the signifier) are connected with "the commemoration and discipline of resistance" (the signified), constructing a myth about the appropriation of resistance by power. From the perspective of Ferdinand de Saussure's structuralist semiotics, elements such as the exhibits and slogans in the memorial hall, as signifiers, are endowed with new meanings, deviating from the original meaning of resistance. Analyzed from Charles Sanders Peirce's triadic sign model, the appearance of the memorial hall, as an iconic sign, gives people a sense of solemnity. However, beneath this surface appearance, there is the manipulation of power; the displays and activities within the hall, as indexical signs, imply the process of power's transformation of resistance. This scene symbol reveals how, in modern society, the power mechanism realizes the control and discipline of ideology by transforming rebellious elements into consumer symbols, prompting the audience to reflect on the complex relationship between culture and power.

5.2 Yuxu Palace: The Reconstruction of Traditional Aesthetics and Philosophy

The octagonal structure of Yuxu Palace embodies the concept of the "Eight Trigrams" in Taoist architecture in China. The "Chiwen" component on the roof is derived from ancient Chinese architecture, and these elements together showcase traditional Chinese aesthetics and philosophy. From the perspective of Ferdinand de Saussure's structuralist semiotics, the architectural form and decorative elements of Yuxu Palace (the signifier) establish a semantic connection with "Taoist culture and the orthodoxy of power" (the signified), and this connection originates from the symbolic system in traditional culture.

Although some audiences misinterpret it as an allusion to the Pentagon in the United States, in fact, it is a reconstruction of the Oriental mythological aesthetic system. As a scene symbol, Yuxu Palace is not only a spatial representation of the power center in the story but also carries profound cultural connotations. It demonstrates the inheritance and innovation of traditional culture in the film when constructing a fantastical world, as well as a unique interpretation of

the Oriental aesthetic system.

From the perspective of Charles Sanders Peirce's triadic sign model, the overall shape of Yuxu Palace, as an iconic sign, has distinct characteristics of traditional Chinese architecture. Its status and function in the story (such as the place of power decision-making), as indexical signs, influence the development of the plot and the relationships between characters. From the perspective of Roland Barthes' mythological theory, Yuxu Palace constructs a myth about the power system of the Oriental myth, conveying the values and philosophical thoughts in traditional culture and at the same time reflecting the modern transformation of traditional cultural symbols in the film.

6. CULTURAL SYMBOLS: THE INTEGRATION OF MYTHOLOGICAL ARCHETYPES AND MODERN VALUES

6.1 The Hunyuan Pearl: The Carrier of Identity Anxiety and Philosophical Reflection

From the perspective of the psychoanalytic school, the Hunyuan Pearl can be regarded as a metaphor for the mother's womb, and in the sequel, it may evolve into more complex identity anxiety. Ne Zha and Ao Bing share the energy of the Hunyuan Pearl, and this setting constitutes what Gilles Deleuze called the "body without organs," subverting the traditional dualism of the physical body and the soul.

Analyzed from the perspective of Ferdinand de Saussure's structuralist semiotics, the existence of the Hunyuan Pearl (the signifier) establishes a semantic connection with "chaos, origin, and the root of identity" (the signified), and this meaning is bestowed by the narrative of the film. As a cultural symbol, the Hunyuan Pearl triggers the audience's philosophical thinking about issues such as identity, self, and existence. At the same time, it also reflects the film's innovation based on mythological archetypes, incorporating modern philosophical thinking and endowing the story with deeper connotations.

From the perspective of Charles Sanders Peirce's triadic sign model, the shape of the Hunyuan Pearl, as an iconic sign, gives people a sense of mystery and chaos; its role in the story (such as the source of energy and the bond of identity), as indexical signs, drives the development of the plot and the changes in the relationships between characters. The application of the symbol of the Hunyuan Pearl demonstrates the film's creative idea of integrating traditional mythological elements with modern philosophical thoughts, which is in line with the characteristic in Roland Barthes' mythological theory that symbols carry new meanings in cultural evolution.

6.2 The Image of the Demon Child Ne Zha: The Collision Between Subculture and Power Governance

From the perspective of cultural studies, the image of the Demon Child Ne Zha embodies the stigmatized subcultural group. Characteristics such as his smoky makeup, hands-in-pockets posture, and mischievous

laughter align with the definitions of punk subculture, showcasing a spirit of rebellion and unruliness. In Saussurean structuralist semiotics, Ne Zha's appearance and behavioral traits (as signifiers) are linked to the concepts of "rebellion" and "subculture" (as signified), a semantic connection rooted in the subcultural symbolic system. However, when he is incorporated into the mainstream culture as an official deity in the Heavenly Court, he falls into the trap of power's "governmentality," a process that reveals the potential fate of subcultures-being disciplined and assimilated-in their interaction with mainstream culture. This reflects the operational mechanisms of cultural power and the shifting attitudes of social strata toward subcultures.

Analyzed through Peirce's triadic sign theory, Ne Zha's stylized appearance functions as an iconic sign, visually embodying subcultural characteristics; his journey of identity transformation serves as an indexical sign, hinting at the role of cultural power. From Roland Barthes' mythological perspective, the evolution of the Demon Child Ne Zha-from a symbol of subcultural rebelliousness to a figure integrated into the mainstream cultural system-represents a process of myth reconstruction. It demonstrates how cultural power achieves ideological control and guidance through symbolic manipulation, prompting the audience to reflect deeply on the relationships among culture, power, and the individual.

7. CONCLUSION

This thesis employs multidisciplinary semiotic theoretical perspectives to deeply analyze the symbolic systems of characters, artifacts, scenes, and culture in *Ne Zha 2*, revealing how the film achieves profound meaning-construction and modern cultural translation through its semiotic framework. Character symbols, represented by Ne Zha, Ao Bing, and Shen Gongbao, reflect the struggles and compromises of individuals within social structures through the concretization of identity dilemmas and power games. Artifact symbols such as the Qiankun Circle, Tianyuan Cauldron, and Jade Tablet of Yuxu Palace carry cultural inheritance and power symbolism, demonstrating the semantic transformation of traditional symbols in modern narratives. Scene symbols, including the Heaven's Tribulation Memorial Hall and Yuxu Palace, serve as spatial carriers of simulacral devices and the reconstruction of Eastern aesthetics, respectively, uncovering the appropriation

of ideology and the innovative expression of traditional culture. Cultural symbols, through the Hunyuan Pearl and the Demon Child image, achieve the integration of mythological archetypes and modern values, prompting the audience to engage in philosophical reflections on identity, subculture, and its relationship with mainstream culture.

These semiotic systems do not exist in isolation but are founded on the arbitrariness and conventionality of Saussurean structuralism, realizing signifying functions at different levels through Peirce's triadic sign model, and endowed with deep ideological connotations within Roland Barthes' mythological framework. *Ne Zha 2* skillfully applies semiotic principles to transform traditional mythological stories into modern cultural texts, inheriting the genes of Chinese traditional culture while incorporating contemporary social issues and values. Complemented by audiovisual language, it constructs a meaningful world full of tension and depth.

This symbolic narrative strategy not only provides the audience with rich interpretive spaces but also achieves effective cultural transmission and value resonance. The success of *Ne Zha 2* indicates that film creation and analysis from a semiotic perspective can find unique narrative paths and expressive methods amid the cultural collisions between tradition and modernity, and between the local and the global, offering a valuable paradigm for the development of domestic animated films. In the future, with the continuous advancement of film art and semiotic theory, this interdisciplinary research perspective will continue to help us excavate the deeper cultural values and social meanings of film works.

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On Corpus-based Approach into Metadiscourse: A Review of "A Corpus-based Examination of Reflexive Metadiscourse in Majority and Dissent Opinions of the U.S. Supreme Court"

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Abstract: This article is designed to make a review of the research article "A corpus-based examination of reflexive metadiscourse in majority and dissent opinions of the U.S. Supreme Court". The research background and purpose, theoretical framework, methodology, findings, contributions, and limitations and implications of the research article are covered. Particularly, this article, grounded on the relevant research into metadiscourse, focuses on the corpus-based approach and aims to show its role in metadiscourse studies.

Keywords: Review; Metadiscourse Studies; Corpus-based Approach

1 INTRODUCTION

This review article examines Jamie McKeown's (2021) research article "A corpus-based examination of reflexive metadiscourse in majority and dissent opinions of the U.S. Supreme Court". Jamie McKeown's research offers a unique perspective on judicial discourse by investigating the use of reflexive metadiscourse in the written opinions of the U.S. Supreme Court (SCOTUS). McKeown's work fills a gap in the literature by contrasting majority opinions and dissent opinions, and focusing on metadiscourse in judicial opinions. In her research, two understudied phenomena are exclusively explored: separate opinions and the discursive foci of reflexive metadiscourse in interactive written genres. Through a corpus-based approach, McKeown sheds light on how SCOTUS justices employ reflexive metadiscourse to construct and respond to legal arguments. The review covers the research background and purpose, theoretical framework, methodology, findings, contributions, limitations and implications of her research.

2. RESEARCH BACKGROUND AND PURPOSE

The research background is set against the broader context of judicial discourse analysis and the increasing influence of courts on social issues. Despite the paramount importance of court decisions, the realm of judicial discourse within linguistic scholarship remains a relatively neglected field, with

numerous linguistic components of this discourse remaining underexplored. As the body of research expands to encompass the application of the metadiscourse across diverse interactive written genres, there exists a notable absence of investigations into written forms of communication, which entail a relatively higher social stakes. The extension of the metadiscourse construct to new and unexplored data types offers researchers an invaluable opportunity to delve into novel insights concerning the nature of metadiscourse.

McKeown aims to shed light on the use of reflexive metadiscourse, a type of linguistic expression that refers to discourse or discourse participants, in SCOTUS majority and dissent opinions. The purpose of the research is threefold:

- (a) To examine frequency differences in the overall use of reflexive metadiscourse in majority and dissent opinions.
- (b) To investigate frequency differences in the use of self-focused and other-focused reflexive metadiscourse.
- (c) To contribute to the understanding of the nature of metadiscourse in interactive written genres.

3. THEORETICAL FRAMEWORK

In terms of the theoretical foundation, the researcher employs a taxonomy adapted from Adel's (2006, 2017) model of reflexive metadiscourse, which distinguishes between self-focused and other-focused metadiscourse.

Reflexive metadiscourse, as defined by Adel (2017), refers to linguistic expressions that explicitly address the discourse itself or the medium of language within the discourse. For an element to be qualified as metadiscourse under Adel's (2006) framework, it must possess a referential link to the ongoing discourse or discourse participants. Her approach distinguishes between those references that transcend the current communicative context and those that refer to events external to the discourse. The former are categorized as intertextual references and thus not regarded as reflexive metadiscourse, and the latter are seen as object language and likewise not counted as

reflexive metadiscourse. To enhance the compatibility with her specific corpus data, McKeown adapts Adel's model by introducing two key modifications: firstly, by differentiating the

discursive foci of the current writer; and secondly, by making a series of taxonomic adjustments to the classification system. The following is her revised taxonomy for the research.

Marker	Function	Self-focused	Other-focused
Defining	Comments on the use of terminology/language in the current discourse.	... we often use familiar terms such as "long distance" and "free calls" rather than more precise terms Justice Scalia uses adjectives such as "traditional" or "textually based" to describe his distinctions ...
Communicating	Foregrounds the fact that something is being/has been communicated.	... we should speak to the significance of the new §2264(b) ...	The only thing to be said for the Court's inventive distinction is ...
Arguing	Stresses the discourse act performed and expresses a viewpoint or opinion.	The answer is yes.	The majority also asserts that, without counsel ...
Clarifying	Marks an attempt by the writer-persona to resolve and/or highlight ambiguity/potential misinterpretation/omission within the discourse. This often involves negative statements.	... we cannot say that the respondents' lawsuits frustrate ...	The majority might mean that Michigan law afforded ...
Glossing	Expands upon the material in the discourse through exemplification and reformulation.	For example, projections concerning a company's future sales ...	Consider the Court's example of a prisoner subject to a ten-year sentence.
Adding	Signals the point at which additional information is being added to the discourse.	In addition, the first time the jury was exposed to the prosecutor's narrow..	... we offer a few additional words in response to Justice Thomas' dissent ...
Concluding	Signals the fact that something is being concluded or has been concluded.	Because we conclude that §241(a)(5) ...	The Court's contrary conclusion does not ...
Previewing	Announces what will happen in the discourse. The scope includes things that will immediately happen as well as things that will follow later.	I explain in greater detail below why testimony ...	As an initial matter, the difficulties that the Court's standard introduces ...
Reviewing	Point back to what has already occurred in the discourse.	As explained above, the Ninth Circuit granted relief based ...	As noted above, see supra, at 10, the Court reserves the question ...
Enumerating	Order the discourse through the use of numerical tags and/or finality adverbs.	First, the overbreadth doctrine permits the ...	First, the Court notes that the ...

Table 1 Taxonomy for the Research

4. METHODOLOGY

4.1 Research questions

McKeown's research investigates the following research questions:

- (1) What frequency differences exist (if any) in the overall use of reflexive metadiscourse in majority and dissent opinions?
- (2) What frequency differences exist (if any) in the use of self-focused reflexive metadiscourse in majority and dissent opinions?
- (3) What frequency differences exist (if any) in the use of other-focused reflexive metadiscourse in majority and dissent opinions?

4.2 Data

In order to deal with the research questions mentioned above, McKeown adopts a corpus-based approach, which is commendable for its rigorous capability of vast data. Specifically, McKeown collects data from the Cornell Legal Information Institute (a publicly available, open access repository of U.S. legal authorities) and compiles two corpora (526, 070 words in total). One contains 60 majority opinions (302,921 words) and another contains 60 dissent opinions (223,149 words). Each corpus is meticulously constructed to include the written opinions from 15 individual Justices of the Supreme Court of the United States (SCOTUS), spanning the timeframe from 1990 to the present. These corpora feature a standardized configuration of four opinions per Justice, ensuring an equitable representation across issues. The researcher takes meticulous care to balance the corpora across various dimensions: the specific issue areas addressed, the size of the judicial coalitions formed, and the length of the respective opinions. Furthermore, in using these corpora for research purposes, only the sections containing

majority and dissenting opinions in published SCOTUS judgments are included for the research, thereby preserving the integrity and relevance of the dataset for analytical purposes.

4.3 Analytical steps

The analysis involves three steps: identification of metadiscursive references, assignment of metadiscursive functions, and classification of discursive focus.

In the first step, her analysis involves a thorough and meticulous review of each opinion within two corpora, utilizing the UAM Corpus Tool 5 version 2.8. This process entails identifying and tagging instances of language that explicitly index current discourse participants (qua discourse participants) or the discourse itself (qua discourse). Following this manual close reading, the corpus search functionality is utilized by her to perform a comprehensive scan of both corpora, ensuring no pertinent items are overlooked.

In the second step, the researcher systematically assigns metadiscursive functions to all annotated instances of reflexive language, using the sentence as the fundamental unit of analysis. Notably, multiple occurrences of various types of reflexive metadiscourse within a single sentence are counted separately.

In the third step, the analysis covers a crucial distinction between two types of reflexive metadiscourse utilization: self-focused, where the current writers employ reflexive metadiscourse to articulate their personal perspective on the law, and other-focused, where it is used to engage with and respond to the legal views of another discourse participant.

Upon compiling the results pertaining to the distinct

populations relevant to the three research questions, a Z-test is applied. This statistical test, taking into account the size of the respective corpora, facilitates the assessment of whether the observed outcomes in one dataset are statistically significant compared to the expected frequency if they are distributed similarly to the other dataset. This approach ensures the validity and robustness of the findings.

Thus, by categorizing metadiscursive items according to their functions and foci, McKeown is able to identify nuanced differences in the use of metadiscourse between majority and dissent writers.

4.4 The role of the corpus-based approach

The corpus-based approach allows for a large-scale, quantitative analysis that is grounded in authentic data, enhancing the reliability and validity of the findings. Here, a detailed discussion on the role of the corpus-based approach in McKeown's research is to be given. Particularly, the contribution of this approach to the research questions is illustrated with reference to relevant research, that is, to have a look at whether the exploration of reflexive metadiscourse or metadiscourse is based on qualitative research or corpus-based quantitative research. The role of the corpus-based approach in McKeown's research is reflected in the following four aspects.

(1) Quantification and Objective Measures: By building two large corpora—one for majority opinions and another for dissent opinions—the research is able to quantify the frequency of different metadiscursive markers used in both types of judicial opinions. This allows for an objective and comparative analysis that would not have been possible with a qualitative approach alone. For example, McKeown and J. Ladegaard (2020) are concerned with dominance of reflexive metadiscourse and examine how moderators and participants use reflexive metadiscourse to achieve communicative dominance in moderated group discussions. In their research, they do not utilize the corpus-based approach; rather they “adopt a qualitative, micro-interactional and contextually sensitive approach” (McKeown & Ladegaard, 2020: 16), understanding metadiscourse in extended interactional sequences. Their method, to some extent, reduces the possibility of identifying “only those forms the researcher already knows exist and therefore actively looks for” (Sanderson, 2008: 200). However, due to its lack of quantitative analysis led by corpus, the research findings are more or less subjective.

Additionally, since the research method and data are publicly available, other researchers can replicate and validate these findings, fostering transparency and reliability in academic research.

(2) Systematic Identification and Categorization: The corpus-based approach facilitates the systematic identification and categorization of metadiscursive items in the opinions. Using UAM corpus tool, the

researcher is able to tag instances of reflexive language and assign them metadiscursive functions according to a predefined taxonomy. Specifically, in McKeown's identification of metadiscursive references, she first manually closely reads the corpora and then she uses the corpus search functionality to check both corpora for items that is potential to be discounted. This ensures a high degree of consistency and reliability in the data analysis. In the same vein, drawing on the corpora, Li and Xu (2020) investigate the similar and divergent use of metadiscourse in Chinese and English research article introductions and discussions. They use the software Yacsi 0.96 to segment linguistic expression in the Chinese subdata into words and manually annotate metadiscourse as personal or impersonal and the inter-coder agreement rate is set as 0.89. These steps make the identification and classification systematic and comprehensive.

(3) Statistical Validation: By employing statistical tests such as the Z-test, the researcher is able to determine whether the observed differences in the use of metadiscourse between majority and dissent opinions are statistically significant. This provides a robust basis for drawing conclusions about the frequency differences in the research. In the same manner, Chen and Li (2023) concern the distribution of interactional metadiscourse in news commentaries of China Daily (CD) and The New York Times (NYT), and probe into the interplay between linguistic and cultural features, that is, how news commentaries of the two newspapers from different cultures have employed interactional metadiscourse to shape their arguments in opinion discourse on the same topic. After searching and manual labeling interactional metadiscourse in the UAM Corpus Tool, all counts of the linguistic features are then normalized to frequencies per 1000 words to facilitate comparison across corpora. Subsequently, chi-square tests are performed using SPSS 25.0 to identify any statistically significant differences in the use of stance and engagement between the two corpora. Such validation of linguistic data allows a more convincing finding, which is achieved on the basis of the corpus assistance.

(4) In-depth Exploration of Individual Markers: The corpus-based approach also enables an in-depth exploration of highly significant individual markers, such as clarifying and enumerating devices. By analyzing these markers in context, the research is able to reveal nuanced differences in how they are used in majority and dissent opinions. In the study of metadiscourse, a “marker” approach is used much more frequently, and research often focuses on small units of analysis, typically word-based (Ädel, 2023). For example, Triki (2024) analyzes the distribution of exemplification and reformulation metadiscourse markers in expert linguists' writings, with a corpus of 90 single-authored research articles and book

chapters. Through the frequency distribution of specific exemplification and reformulation metadiscourse markers, he investigates the use of these metadiscourse markers in contexts and stresses the impact of individuality and style preferences within the same discourse community on the authors' discursive choices. In these studies, with the help of the corpus method, individual markers could be easily retrieved and also studied thoroughly by discussing them in contexts.

Metadiscourse "may be captured in all its diversity" (Sanderson, 2008: 200). Ädel (2023) keeps an eye on the metadiscourse over extended, interactional sequences and adopts a "move" approach rather than a "marker" approach to study the metadiscourse. With regard to metadiscourse studies, she underscores the importance and necessity of a more contextualised analysis of the discourse functions that speakers/writers use metadiscourse to perform. Even so, her research also owes much to the corpus linguistics. In her research, she builds a corpus of 13 presentations to study the metadiscourse in spoken student presentations. She makes a quantitative analysis regarding the distribution of different types of metadiscourse functions.

From relevant research on reflexive metadiscourse or metadiscourse mentioned above, it is evident that the study on the frequency distribution of reflexive metadiscourse or metadiscourse could not be conducted without the assistance of the corpus linguistics. And the use of these reflexive metadiscourse and metadiscourse markers could also be analyzed in depth in specific contexts. Thus, it is safe to say that the corpus technology plays a significant role in the research of reflexive metadiscourse and metadiscourse.

5. FINDINGS

The results of McKeown's analysis reveal both similarities and differences in the use of reflexive metadiscourse between majority and dissent opinions. Overall, both majority and dissent writers use a similar amount of reflexive metadiscourse, with notable differences in frequency and focus.

Frequency Differences: The research finds that dissent writers use significantly more communicating devices, while majority writers use more enumerating devices. This suggests that dissent writers tend to engage more in reporting and responding to the majority opinion, while majority writers focus more on structuring their arguments.

Focus Differences: Majority writers display a pronounced self-focus, using reflexive metadiscourse to construct their own view of the law. In contrast, dissent writers demonstrate an other-focus, using reflexive metadiscourse to respond to the majority's discourse. This finding highlights the differing rhetorical strategies employed by majority and dissent writers. **Self-focused Metadiscourse:** Majority writers rely heavily on clarifying and enumerating

devices to structure their arguments and assert epistemic authority over the discourse. The use of clarifying devices allows majority writers to preemptively address potential ambiguities and close down lines of inquiry that could undermine their arguments. Enumerating devices, on the other hand, serve to organize and highlight the key points of the majority's position. **Other-focused Metadiscourse:** Dissent writers, on the other hand, use more communicating, clarifying, and enumerating devices to respond to the majority opinion. Their use of communicating devices often involves reportative clauses that attribute positions to the majority, while clarifying devices are employed to challenge the overall nature of the majority's arguments, highlight omissions, and negatively characterize aspects of the majority opinion. Dissent writers also use enumerating devices to structure their counterarguments against the majority.

6. RESEARCH CONTRIBUTIONS

This research offers several valuable contributions to the field of legal discourse analysis and metadiscourse research. They are as follows.

New Insights into Judicial Discourse: By focusing on reflexive metadiscourse in majority and dissent opinions, the research sheds light on the linguistic strategies judges employ to construct and respond to legal arguments.

Quantitative Data: The corpus-based approach enables a large-scale, quantitative analysis, providing more robust evidence than previous qualitative studies.

Focus Distinction: The distinction between self-focused and other-focused reflexive metadiscourse offers a novel perspective on the differing rhetorical strategies of majority and dissent writers.

7. LIMITATIONS AND IMPLICATIONS

While the research presents insightful findings, there are also some limitations and opportunities for future research.

Data Scope: The research focuses solely on SCOTUS decisions, neglecting similar research in other legal systems and limiting the possibility of cross-cultural comparisons. Future research could extend the analysis to lower courts or other legal systems and cultural contexts, to explore generalization of the findings or to investigate the interaction between linguistic devices and culture. And another potential area for future research is to examine the use of reflexive metadiscourse in other types of judicial opinions, such as concurring opinions, to gain a more holistic view of metadiscourse usage in legal writing.

Theoretical Framework: To some extent, the classification framework of metadiscourse used in the research may be subjective and limited. Although the researchers revised Ädel's framework, there may still be types or functions of metadiscourse that have not yet been taken into consideration.

Qualitative Analysis: The quantitative focus of the research provides a broad overview but may overlook subtle nuances in language use. It may have lacked depth in interpretation and theoretical exploration. For example, the reasons why majority opinions use more self-focused metadiscourse and dissent opinions use more other-focused metadiscourse are not thoroughly theoretically explained.

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Garden-path Sentences and the Architecture of Sentence Processing: A Cross-theoretical and Cross-linguistic Review

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Abstract: This paper explores the cognitive mechanisms underlying the processing of garden-path sentences—temporarily ambiguous structures that mislead initial syntactic interpretation. It critically examines two dominant parsing models: the syntax-first (modular) model and the constraint-based interactive model, focusing on how they account for real-time sentence comprehension. The discussion is extended to the role of working memory in ambiguity resolution, highlighting individual cognitive differences. Moreover, the paper incorporates empirical evidence from eye-tracking and ERP studies and reviews their contributions to parsing theory. Special attention is given to Chinese as a typologically distinct language, offering a cross-linguistic perspective on parsing challenges. By synthesizing research across languages and methodologies, the study aims to deepen the understanding of universal and language-specific parsing strategies in sentence processing.

Keywords: Garden-path Sentences; Syntactic Ambiguity; Sentence Processing; Working Memory; Eye-tracking; ERP; Mandarin Chinese; Parsing Models

1. INTRODUCTION

Garden-path sentences—temporarily ambiguous constructions that initially lead readers toward an incorrect syntactic interpretation—have long served as a valuable experimental tool in psycholinguistic and cognitive linguistic research. These structures reveal crucial insights into the mechanisms of real-time sentence processing and the interplay between syntax and semantics. Two primary theoretical models have been developed to account for these phenomena: the syntax-first (modular) model, which posits a serial and autonomous syntactic parsing process prior to semantic integration; and the constraint-based (interactive) model, which assumes that multiple sources of information—including syntax, semantics, context, and lexical cues—are processed simultaneously and competitively during comprehension.

Within the syntax-first model, principles such as Minimal Attachment and Late Closure^[6,7] guide initial parsing decisions by favoring simpler syntactic structures. When these preferred structures fail to yield coherent interpretations, reanalysis processes are triggered, often manifesting in garden-path effects. In

contrast, the interactive model^[16,22] argues for concurrent processing of competing structures, in which the most contextually and semantically supported interpretation is ultimately selected. These competing models have sparked extensive empirical debate, particularly through studies using eye-tracking^[20], ERP (e.g., P600 and N400 components^[9]), and working memory paradigms^[5,13].

Despite extensive theoretical debate over the cognitive mechanisms underlying sentence processing, much of the existing literature has focused on English and other Indo-European languages, where morphosyntactic cues are more overt. In contrast, languages such as Mandarin Chinese—with typologically distinct features including flexible word order, lack of inflection, and topic-prominent structures—pose unique challenges for parsing models. However, relatively few studies have systematically examined how garden-path effects manifest in such languages or how language-specific characteristics interact with universal parsing principles.

Furthermore, while both the syntax-first and constraint-based models have received empirical support, cross-linguistic validation remains limited, and direct comparisons between these models in non-Indo-European languages are rare. Similarly, although working memory capacity is widely acknowledged as a moderator in ambiguity resolution, the extent to which individual cognitive constraints influence parsing strategies across different language systems is still underexplored.

This paper seeks to bridge these gaps by synthesizing findings on garden-path sentence processing in both English and Mandarin, evaluating how parsing models account for structural ambiguity across typologically diverse languages, and analyzing how working memory and linguistic cues jointly shape syntactic resolution. In doing so, this study contributes to a broader understanding of universal and language-specific mechanisms in real-time sentence comprehension.

2. THEORETICAL ACCOUNTS OF SENTENCE PROCESSING

2.1 The Syntax-First (Modular) Model

The syntax-first model posits that syntactic parsing operates in a modular and serial fashion, whereby grammatical structure is constructed independently and prior to semantic interpretation^[6,7]. Parsing is

governed by principles of economy, most notably Minimal Attachment, which favors the syntactic tree with the fewest nodes, and Late Closure, which attaches incoming material to the current phrase or clause under construction^[8]. These strategies guide the initial parse, which is maintained until a semantic anomaly or grammatical inconsistency necessitates reanalysis.

Reanalysis involves syntactic repair mechanisms, often evidenced by increased reading times, regressive saccades in eye-tracking studies^[20], and late positive components (P600) in ERP data^[19]. Garden-path effects emerge as a consequence of the parser's preference for local simplicity and delayed integration of semantic and contextual cues. This model supports the view that the language processor is structured into autonomous modules that communicate post hoc, with syntax exerting initial primacy in structural assignment.

2.2 The Constraint-Based Interactive Model

In contrast, the interactive model argues for parallel processing of syntactic, semantic, lexical, and contextual information^[16]. Parsing decisions are driven by the interaction of probabilistic constraints, including subcategorization frames, lexical frequency, semantic plausibility, and discourse coherence^[1,22]. Rather than selecting a single initial parse, the processor evaluates multiple interpretations concurrently and updates preferences as new input is received.

Syntactic ambiguity is resolved through the activation of representations that best satisfy competing constraints, and context exerts immediate influence on structure-building decisions. This model aligns with connectionist approaches, wherein interpretation emerges from gradient activation across a network of competing forms. It also accounts for variability in parsing outcomes, cross-linguistic processing strategies, and the role of prior experience in shaping sentence interpretation^[11].

3. WORKING MEMORY AND COGNITIVE CONSTRAINTS

The resolution of syntactic ambiguity in garden-path sentences is closely associated with the limitations and capacities of working memory^[2,13]. According to Baddeley's multicomponent model, sentence processing engages both the phonological loop and the central executive in managing temporary representations and coordinating structural reanalysis. High-span individuals are better able to retain multiple syntactic possibilities, maintain competing parses, and recover from misinterpretations^[5].

Working memory constraints have been shown to modulate parsing success. High working memory capacity (WMC) facilitates rapid recovery from ambiguity, supports integration of syntactic and semantic cues, and allows for flexible updating of structural hypotheses^[18]. In contrast, low-span individuals often exhibit persistent garden-path effects due to premature commitment and failure to maintain

alternative representations^[17].

Theoretical accounts differ on whether WMC operates as a shared resource across syntactic and non-syntactic domains or whether linguistic parsing draws upon dedicated cognitive mechanisms^[13,17]. Evidence from neuropsychological studies of aphasia and aging, as well as from reading span experiments, supports both domain-general and language-specific interpretations.

4. EMPIRICAL METHODS IN SENTENCE PROCESSING RESEARCH

4.1 Eye-Tracking Evidence

Eye-tracking methodologies have been instrumental in mapping the temporal course of sentence comprehension. Garden-path sentences typically elicit longer first-pass fixation durations, more frequent regressions, extended go-past times, and higher total reading times at disambiguation points^[8,20]. These measures reflect the parser's difficulty in constructing coherent syntactic representations and the cognitive cost of reanalysis.

Rayner, Carlson, and Frazier^[20] demonstrated that initial parses are influenced by principles of syntactic economy, with reanalysis triggered by violations of plausibility or grammar. Staub expanded on this work, showing that the parser does not entirely ignore verb argument structures in ambiguous constructions, refining the modular perspective through detailed eye movement data^[21].

4.2 ERP and Neurocognitive Correlates

ERP studies have revealed distinct neural signatures of syntactic and semantic processing. The P600 component is consistently associated with syntactic reanalysis and structural revision^[9,19], particularly in response to ungrammatical or unexpected sentence continuations. The N400 component reflects the integration of lexical and semantic information and is sensitive to violations of contextual coherence^[14].

In garden-path sentences, both components are frequently observed. These results indicate that syntactic and semantic systems interact during comprehension and that ambiguity resolution engages both domain-specific and general cognitive mechanisms. Combined methodologies that integrate ERP with eye-tracking^[4] offer a fine-grained account of processing dynamics during real-time reanalysis.

5. GARDEN-PATH SENTENCES IN CHINESE LINGUISTICS

Chinese presents unique challenges in syntactic parsing due to the absence of overt inflectional morphology, topic-prominent structure, and high word order flexibility. These features contribute to structural ambiguity, making Mandarin an ideal language for garden-path research.

Recent studies emphasize the role of discourse context, semantic expectations, and focus structures in ambiguity resolution. Contextual information mitigates processing difficulty and facilitates successful interpretation^[12]. Eye-tracking data indicate longer fixations and increased regressions in

structurally ambiguous regions, especially when disambiguating cues are absent.

In second language learning and translation contexts, garden-path effects pose challenges to comprehension. Instruction in syntactic awareness and context-sensitive reading strategies is recommended to enhance parsing accuracy.

6. CONCLUSION

Garden-path sentences provide critical insights into the structure and function of the human sentence processor. The syntax-first and constraint-based models offer competing but complementary perspectives on the integration of linguistic information. Empirical research has illuminated the cognitive costs of reanalysis and the neural mechanisms supporting ambiguity resolution.

Working memory plays a central role in determining individual differences in parsing behavior. Cross-linguistic evidence, particularly from Chinese, reinforces the need to account for typological variation in syntactic structure and parsing preferences. Future research integrating multimodal data, computational models, and language-specific syntax will enhance understanding of dynamic sentence processing mechanisms.

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Review of a Corpus-based Comparison of Linguistic Markers of Stance and Genre in the Academic Writing of Novice and Advanced Engineering Learners

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Abstract: This study conducts a corpus-based comparative analysis of linguistic stance markers employed by novice and advanced engineering learners in academic writing, as well as their variations across different genres. Utilizing quantitative and qualitative methods, the findings reveal that advanced learners demonstrate more frequent and diverse usage of stance markers (e.g., modal verbs, cognitive verbs, adverbial intensifiers) and exhibit greater flexibility in adapting linguistic strategies according to academic genres (e.g., research reports, literature reviews), reflecting their mastery of disciplinary conventions. In contrast, novice learners rely more on basic stance expressions and show weaker cross-genre linguistic adaptability. The research elucidates the connection between academic writing proficiency development and disciplinary socialization processes, providing empirical evidence for writing pedagogy in engineering education.

Keywords: Corpus Analysis; Stance Markers; Academic Writing; Engineering Education; Novice vs. Advanced Learners; Genre Variation; Linguistic Feature Comparison; Disciplinary Socialization

1. INTRODUCTION

Corpus linguistics is a research methodology that enables comprehensive investigation of language use and variation, uncovering empirically grounded and widely applicable linguistic patterns.⁰ By employing corpus-based methods, researchers can obtain measurable distributional and frequency data, which in turn facilitate clearer identification of linguistic patterns and trends in both general and specialized discourses. In linguistic inquiry, stance represents a crucial dimension: communicative exchanges convey not only propositional meaning but also the speaker's or writer's affect, attitudes, value judgments, and evaluations—including assessments of how information is presented.⁰ In 2024, Siu Wing Yee Barbara et al. published the article “A Corpus-Based Comparison of Linguistic Markers of Stance and Genre in the Academic Writing of Novice and Advanced Engineering Learners” in *Humanities and Social Sciences Communications*. The paper first provides a concise overview of their study and then offers a critical evaluation.

2. CONTENT OVERVIEW

This article was produced by an international, multidisciplinary team whose members bring diverse disciplinary expertise to the study. Professor Siu Wing Yee Barbara of the Department of Civil and Environmental Engineering at The Hong Kong Polytechnic University played a pivotal role in data collection and text verification. Dr. Muhammad Afzaal—currently Associate Professor at the Institute of Corpus Research and Applications, Shanghai International Studies University, who holds a PhD from Shanghai Jiao Tong University and previously served as a research fellow at The Hong Kong Polytechnic University—contributed extensive expertise in corpus linguistics and discourse analysis. With over sixty publications in international journals, Dr. Afzaal provided the study's robust theoretical and methodological foundation. Professor Hessah Saleh Aldayel of King Saud University made key contributions to the literature review and manuscript revision, her scholarly insights ensuring the paper's academic rigor. This team exemplifies the power of interdisciplinary collaboration: Professor Barbara's engineering background, Dr. Afzaal's linguistic proficiency, and Professor Aldayel's strengths in critical synthesis mutually reinforced one another, driving the research to greater depth. Such a cross-cultural, cross-disciplinary model not only broadened the study's horizons but also elevated its scholarly quality and innovativeness.

This study conducts a contrastive analysis of stance markers in academic writing produced by two groups of civil engineering students: non-native speakers at The Hong Kong Polytechnic University (whose theses are drawn from the MICUSP corpus) and native English-speaking seniors in the Department of Civil and Environmental Engineering at the University of Michigan. Focusing on persuasive, argumentative, and analytical-explanatory genres, the investigation examines a range of metadiscourse features—such as hedges, boosters, and concessive or contrastive connectives—to provide a comprehensive account of how L2 engineering students express stance differently from their native-speaker counterparts. By identifying the areas in which non-native writers fall short and probing the underlying causes of these

divergences, the research aims to offer pedagogical insights that can enhance English instruction for non-Anglophone engineering students, thereby improving their disciplinary literacy and academic writing proficiency. The study addresses three specific research questions:

RQ1: What stance-expression and engagement strategies do non-native and native English writers respectively employ in academic prose?

RQ2: Which recurrent patterns of stance markers emerge in academic texts from the University of Michigan CEE corpus and the MICUSP corpus?

RQ3: How can these observed patterns inform strategies to help non-native writers strengthen their argumentative writing skills?

This study employs a corpus-based interlanguage contrastive analysis. The learner corpus comprises 97 undergraduate theses in civil and environmental engineering submitted to The Hong Kong Polytechnic University, while the native-speaker corpus is drawn from 155 upper-level papers in the same discipline selected from the Michigan Corpus of Upper-Level Student Papers (MICUSP).

MICUSP, developed by the English Language Institute at the University of Michigan, is a written-English corpus totaling 2.6 million words and consisting of 829 A-grade essays authored by fourth-year undergraduates and graduate students across sixteen disciplines. Its highly competitive undergraduate and graduate programs (ranked 28th nationally by U.S. News & World Report in 2018) ensure that the corpus represents a benchmark of advanced academic writing. The Polytechnic University CEE corpus, in contrast, comprises 811,181 words drawn from PolyU civil and environmental engineering undergraduate theses.

Stance markers were identified through an integrative review of the literature and a pilot survey of the target corpora. Using Sketch Engine, each candidate marker was retrieved and tabulated, and the analysis combined quantitative frequency counts with qualitative functional examination. After uploading both corpora to Sketch Engine, texts were POS-tagged via the TreeTagger tagset, and custom Python scripts extracted lexis and phrases associated with stance. Extracted items were first subjected to qualitative vetting—researchers manually reviewed each marker in its immediate context to confirm accurate classification—then to quantitative analysis, in which occurrences were normalized per 10,000 words. Finally, chi-square tests and Fisher's exact tests were conducted in SPSS to assess the statistical significance of differences in stance-marker usage between L2 learners and native-speaker writers, thereby determining whether their academic stance-taking patterns diverge in a statistically reliable manner.

3. BRIEF COMMENTARY

In recent years, an increasing number of Chinese scholars have integrated corpus techniques with discourse studies, yielding a wealth of findings on the

expression of stance. Empirical investigations of stance in written language have examined a variety of contexts and constructions: for instance, Wang Yuxi explored the emergent stance marker “Shui Dong (a)” in contemporary Chinese;⁰ Ren Yuxin and Wei Xiaoli analyzed epistemic markers such as “Wo Xiang,” “Wo Renwei,” “Wo Juede,” and “Wo Ganjue” in doctoral defenses and dissertation proposals;⁰ Zhang Tiantian et al. studied the negating evaluative marker “Shao Lai”;⁰ and Yang Wancheng and Chen Changlai investigated the discourse marker “Wo Gan Shuo.”⁰ Researchers have also examined stance in journalistic reporting,⁰⁰ in business discourse,⁰⁰ and most intensively in academic texts. Within the academic domain, studies have targeted specific lexico-grammatical features,⁰⁰ journal-article abstracts,⁰⁰ and identity constructio.⁰ Moreover, comparative analyses of stance between Chinese L2 learners and native English writers have proliferated.⁰⁻⁰

A seminal reference for the present study is the work of Laura L. Aull and Zak Lancaster, who employed AntConc to compare 4,032 essays by first-year undergraduates and 615 essays by upper-level undergraduates at the Universities of Michigan and Wake Forest, alongside articles from the COCA Academic Corpus.⁰ Their analysis of stance expression in argumentative writing illuminates how students use language to enact stance, engage readers, and position their research within academic discourse communities—providing a methodological and conceptual paradigm for the current investigation.

Based on both quantitative and qualitative analyses, the researchers offer a thorough discussion of L2 learners' deployment of stance markers in academic writing, delineating how they diverge from native-speaker norms and considering the potential implications for teaching and enhancing L2 writing competence. The key findings are as follows: both the MICUSP and CEE corpora exhibit similar overall frequencies of stance markers, with hedges being the most prevalent, followed by boosters and contrastive connectives, while evaluative commentary markers occur least often. Non-native writers in the CEE corpus make significantly less use of hedges, evaluative commentary markers, and contrastive stance devices than native writers in the MICUSP corpus, who employ these resources more extensively. By examining native-speaker patterns, L2 learners can adopt analogous strategies to harness discourse conventions more effectively in their own academic texts.

This study's corpus is, however, confined to undergraduate theses from the Department of Civil and Environmental Engineering at The Hong Kong Polytechnic University and graduate-level papers from the University of Michigan. Its size and disciplinary scope may not fully represent the writing characteristics of all engineering students, and thus the

universality of the findings warrants further investigation. Moreover, although the research outlines pedagogical implications, it stops short of offering concrete instructional strategies or models to guide students in refining their use of stance markers.

4. CONCLUSION

The collaborative model of this cross-cultural, interdisciplinary research team not only broadens investigative horizons but also enhances the scholarly rigor and innovativeness of the resulting work and thus serves as a valuable exemplar. The core of corpus research lies in the analysis of large-scale, authentic spoken and written data through statistical methods within a defined theoretical framework to uncover prototypical patterns in both form and meaning. Employing corpora for discourse analysis is a powerful approach: corpus-based discourse studies are distinguished by their integration of quantitative and qualitative perspectives, offering a systematic methodology for investigating language. In future discourse research, scholars can employ corpus methods to combine interpretive, qualitative inquiry with data-driven, quantitative analysis when examining specific discourses.

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Interpretation of the New 2017 General Senior High School English Curriculum Standards (2020 Revised)

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Abstract: The purpose of this paper is to interpret the new version of the 2017 general senior high school English curriculum standards (2020 revised). The paper firstly illustrates the background and significance of the revision of the latest English curriculum standards, and also interprets its contents in detail. Then the paper lists some challenges while implementing these standards and gives suggestions respectively. Lastly, it draws a conclusion and puts up with the outlook of new general senior high school curriculum standards.

Keywords: New Version of General Senior High School English Curriculum Standards; Core competencies; Teaching Implication

1. INTRODUCTION

The 2017 version (2020 revised) of the English curriculum standards for general senior high school was launched against the backdrop of China's education system and English education reforms. The standards primarily seek to carry out the requirements of the national education reform, improve students' language competence, and foster their communicative abilities and comprehensive qualities. Another goal is to help teachers teach more effectively and enhance students' overall development by establishing explicit learning objectives and teaching standards^[2].

2. RELEASING BACKGROUND

The revision and advancement of English education in China are greatly impacted by the 2017 release of the new general high school English curriculum standards. Teachers and educational workers can better understand and apply these standards to enhance the quality of teaching and foster the comprehensive quality of students by closely examining the history of the latest version of the curriculum standards, the ability requirements of the students, the core contents, as well as the teaching revelations and the impacts of the students.

3. LITERATURE REVIEW

This section will provide a detailed explanation of the background to the revision of the new 2017 general high school English curriculum standards, including changes in the educational situation at home and abroad, the development and needs of previous curriculum reforms, and the necessity and urgency of the new standards' revision.

3.1 Analysis of Changes in Educational Situation at Home and Abroad

The globalization movement and the quick advancement of information technology have had a significant impact on domestic and international education. The frequency of international contacts is increasing, and students must be more proficient in the language in order to meet the demands of a globalized world. Simultaneously, the demand for education reform has grown urgent as the conventional educational model is no longer able to satisfy the diverse needs of pupils.

3.2 Development and Needs of Successive Curriculum Reforms

China has implemented a number of curriculum reforms in order to better fit the educational system with the demands of the modern world. Teachers and educational workers can gain a better understanding of the need for revised curriculum standards by organizing and evaluating the many curriculum revisions. These reforms, which aim to develop students' overall quality and skills, include not just content-specific changes but also thorough updates to all aspects of the teaching objectives, techniques, and evaluation system.

3.3 Necessity and Urgency of Releasing the New Version of the Curriculum

The difficulties that students encounter are ever more varied as society develops. In light of this, it is now vital and required to revise the new English curriculum standards for senior secondary general schools. The updated standards will provide more demanding instructional materials, better address the learning requirements of students, and foster students' capacity for integrative thinking, creative thinking, and cross-cultural communication.

In summary, educators can gain a better understanding of the background and significance of the 2017 English curriculum standard for general high schools by analyzing changes in the global and domestic educational landscape, the evolution and requirements of subsequent curriculum reforms, and the imperative of revising the current version of the curriculum. Students will benefit from a more thorough and efficient English learning experience as well as increased competitiveness and coping mechanisms in the context of globalization thanks to this revision.

4. INTERPRETATION OF COURSE OBJECTIVES

This section will analyze the curriculum objectives of the new 2017 general senior high school English curriculum standards from three perspectives: explaining the importance of the curriculum objectives for students' overall development, explaining the concept of core competencies cultivation, and analyzing the four-dimensional curriculum objectives.

4.1 Concept of Core Competencies Development

The concept of core competencies development is recognized as the basis of the curriculum objectives in the most recent version of the English curriculum standards for general high schools. The idea places a strong emphasis on pupils' holistic development, including the improvement of their language ability, cultural awareness, thinking capacity, and learning ability. Students can benefit from a wider range of cognitive and ability enhancement in language acquisition by fostering these essential competencies. Lan Susu^[1] stated that English core competencies are the centralized embodiment of the value of discipline education, and they are the correct values, necessary character, and key abilities that students gradually form through discipline learning.

4.2 Analysis of Four-Dimensional Curriculum Objectives

In Tyler's model of objectives, he tends to keep them within measurable limits, that is, to 'granularize' and 'operationalize' them into observable, measurable, and even experimental elements of behavior^[5]. In the new version of the English curriculum standards for general high schools, the curriculum objectives are divided into four dimensions, namely, language ability, cultural awareness, thinking capacity, and learning ability. These dimensions are intertwined with each other and together constitute the comprehensive objectives of students' language learning. It is obvious that these four objectives are impacted by and manifest the requirements of Tyler's objective model.

4.2.1 Language Ability

Language ability is one of the main goals of learning English. It involves developing skills in four domains: speaking, writing, listening, and reading. Students can attain the aim of using English for successful communication by developing their oral expression, reading comprehension, writing, and listening comprehension skills through systematic English learning.

4.2.2 Cultural Awareness

A key objective in developing students' intercultural communication skills is raising their level of cultural awareness. Students can extend their horizons, improve their cross-cultural

communication abilities, and get an understanding of the cultures of English-speaking countries through studying the language. One of the objectives of cultural awareness is also to help pupils develop a sense of identification and confidence in the culture of their own nation.

4.2.3 Thinking Capacity

The objective of strengthening students' critical thinking, creative thinking, and cooperative learning skills is to improve their thinking capacity. Learning English helps students think more critically, think and analyze more effectively, and solve problems more effectively. In the meanwhile, encouraging innovative thinking in students helps foster their inventiveness and creativity. Besides, cooperative learning can help students improve their capacity for effective communication and teamwork.

4.2.4 Learning Capacity

The purpose of nurturing students' lifelong learning abilities is to improve their learning ability. Teachers can provide students with appropriate scaffolding. Wood and other scholars^[3] define scaffolding as a process "that enables a child or novice to solve a task or achieve a goal that would be beyond his unassisted efforts." It can help students become more proficient in using learning techniques and learning strategies, as well as enhance their capacity for autonomous learning, information acquisition, and information processing. These skills not only help students learn English well, but also set a foundation for their future education and growth.

4.3 Significance of Course Objectives for Overall Development of Students

The objectives of the new version of the English Curriculum Standards for General Senior High Schools aim to promote the all-round development of students. By cultivating language ability, cultural awareness, thinking capacity, and learning ability, students can gain cognitive enhancement, cultural experience, thinking ability, and learning strategies in language learning. These abilities will help students to better adapt and develop in their future learning and life.

Finally, the curriculum objectives of the new 2017 general senior high school English curriculum aim to cultivate students' language ability, cultural awareness, thinking capacity, and learning ability by elaborating on the concept of core competencies cultivation, analyzing the four-dimensional curriculum objectives, and discussing the significance of the curriculum objectives for students' overall development, so as to lay a foundation for their future learning.

Although Taylor's model of objectives has played an important role in supporting the development of curriculum standards, it still has many shortcomings. For example, the idea of "student-centered" model has not been fully implemented.

Therefore, when discussing the objective model, teachers and education workers should not only see its contribution to curriculum design and teaching research, but also make breakthroughs and innovations in the process of inheritance^[4].

5. RESTRUCTURE AND OPTIMIZATION OF THE CURRICULUM

In this section, the article will compare the differences in curriculum structure between the old and new standards, analyze the purposes and contents of the compulsory and optional compulsory courses, and discuss how the curriculum can meet the needs of different students.

5.1 Comparison of Curriculum Structure Differences between the Old and New Standards

Compared with the former version, the new version of the English curriculum standards for general high schools has made some revisions and optimizations in the curriculum structure. First of all, the new standards split the curriculum content into compulsory and optional compulsory courses, making the curriculum more flexible and diversified. In addition, the new standards include some new learning requirements and competency objectives to meet the needs of students' overall quality development.

Take the old curriculum standards of the 2003 version for example, although the 2003 experimental version of the standard's curriculum objectives follows certain logical hints, they are more dispersed and unrelated to the idea of student-centered education. The 2017 edition of the standards uses a clear logic and structure to articulate the curriculum objectives, drawing inspiration from the core competencies framework. To help with practice, readers can adhere to the individual literacy standards one by one in accordance with how the text's aims are expressed^[8].

In terms of curriculum structure, the revised version of the curriculum standards separates the compulsory curriculum into two modules: basic and extension. The basic courses emphasize the development of fundamental abilities such as listening, reading, and writing, whereas the extension courses emphasize the development of students' capacity to utilize the language and their cultural literacy. This change makes the curriculum more hierarchical and targeted, which helps to improve students' overall English proficiency.

5.2 Analysis of the Purposes and Content of Compulsory and Optional Compulsory Courses

The courses that students are required to complete during their studies are known as compulsory courses, and they are essential to laying the basis for their foundation in English. The updated curriculum standards emphasize the development of students' basic knowledge in the context of required coursework and blend contemporary educational

ideas with a focus on the development of learning strategies, the guidance of learning strategies, and the development of students' capacity for autonomous learning. Furthermore, the compulsory curriculum places significant emphasis on developing students' complete language skills and intercultural communication abilities.

Optional compulsory courses are those that are chosen based on a student's interests and areas of strength. They support the individual needs of each student. The new Curriculum Standard's Optional Compulsory Courses include multiple theme modules, including Science and Technology, Society, Environment, and Health, as well as Literature Appreciation. Based on their areas of interest and growth, students can select the appropriate courses. Students can better develop their skills and increase the effectiveness and motivation of their learning through the study of selected required courses.

5.3 Exploration of How Curriculum Meets the Needs of Different Students

The English Language Curriculum Standards for General High School Schools, in their updated edition, respond to a variety of student needs through their curriculum. First and foremost, it addresses the development of students' fundamental English proficiency by implementing compulsory courses and combining basic and extension courses. It also emphasizes the development of students' comprehensive language application skills and cultural literacy. Students can develop a strong foundation and enhance their English ability in a comprehensive manner during their studies with this kind of setup.

Secondly, students' interests and strengths are fully respected and their personalized development needs are taken into account through the setting of selective compulsory courses. To better build on their strengths and increase the motivation and efficacy of their learning, students can select the courses that best suit their interests. Such a setting serves to enhance students' interest in learning and fosters their active participation and autonomous development.

To sum up, there have been significant advancements in the curriculum structure's optimization and adjustment in the most recent version of the English curriculum standards for high school general schools. By comparing the differences in curriculum structure between the old and new standards, analyzing the purpose and content of the compulsory and optional courses, and exploring how the curriculum can meet the needs of different students, teachers and educational workers can better understand the features and advantages of the new version of the standards, and provide reference and guidance for teaching practice.

6. UPDATE AND FEATURES OF COURSE

CONTENT

6.1 Main Update

According to the new 2017 edition of the General Senior High School English Curriculum Standards, the course content has undergone a series of updates and improvements. The primary update points are as follows:

Firstly, emphasizing comprehensive language-use skills: the new version of the curriculum focuses on cultivating students' comprehensive language skills, including listening, speaking, reading, writing, and viewing. Instead of dividing language knowledge into separate parts such as grammar and vocabulary, it is taught through actual language use situations.

Secondly, more language skills development is introduced: in addition to the traditional listening, speaking, reading, and writing skills, the new version of the curriculum also adds the development of independent thinking and the ability to utilize language in a comprehensive manner. Students will improve their comprehension and communication skills through reading and listening materials, and develop critical and creative thinking skills.

Third, focusing on the development of learning strategies: the new version of the curriculum focuses on developing students' learning strategies to help them learn English better. Students will learn how to use learning tools and resources effectively, how to make learning plans and goals, and how to adjust learning methods and strategies.

6.2 Analysis of the New Features

By analyzing the content of the new version of the curriculum, it can be clearly seen that it has the following new features in terms of language knowledge, language skills, and learning strategies:

First, language knowledge: the new curriculum emphasizes the development of students' comprehensive language skills and no longer divides language knowledge into separate parts such as grammar and vocabulary. The curriculum will guide students to master the language knowledge through practical language application situations, making it more practical and applicable.

Second, language skills: The new version of the curriculum focuses on developing students' comprehensive language skills, not only on the traditional skills of listening, speaking, reading, and writing but also on students' ability to think independently and comprehensively use language. Students will improve their ability to express themselves and their comprehension through a variety of language expressions.

Third, learning strategies: The new version of the curriculum focuses on developing students' learning strategies to help them learn English better. Students will learn how to use learning tools and resources effectively, make learning plans and goals, and adjust learning methods and strategies. This will help students learn more efficiently and

improve their learning ability.

6.3 Exploration of the New Features

The content of the new version of the general high school English curriculum has the following characteristics, that is contemporary, fundamental, selective, and relevant:

First, contemporary: the new version of the course content is closer to the requirements of the times and focuses on cultivating students' language communication skills in the era of globalization. By introducing real-life language situations and topics, students can get closer to practical applications and improve the effectiveness of language use.

Secondly, fundamental: the content of the new version of the curriculum focuses on cultivating students' basic language skills, focusing not only on the mastery of language knowledge but also on the cultivation of language skills. By building a solid language foundation, students can better cope with various language tasks and communicative situations.

Thirdly, selective: the new version of the curriculum content is more flexible in terms of the choice of teaching content, allowing schools and teachers to make adjustments and choices according to the actual situation. This can better meet the needs of students and make teaching more targeted and personalized.

Fourth, relevant: The new version of the curriculum content focuses on the relevance of different language points and skills and enables students to better utilize the knowledge and skills they have learned by integrating and blending different language knowledge and skills.

In summary, the English curriculum standards for general high schools have undergone significant revisions in terms of major renewal points, new features in language knowledge, language skills, and learning strategies, as well as in terms of selectivity, contemporaneity, fundamentality, and relevance. Students' capacity to use and comprehend English more broadly as well as better adjust to the demands of contemporary society would all benefit from this.

7. CONCLUSION AND OUTLOOK

After being implemented and used for several years, the new English curriculum standards for general senior high schools have produced remarkable outcomes. The key points and highlights of the latest version of the standards will be explained in this section, along with an outlook on the direction of the English curriculum reform in the future. The necessity of furthering the curriculum reform will also be emphasized.

7.1 Summary of Main Features and Highlights

Comprehensive adjustments and improvements have been made to the English curriculum standards for general high schools in terms of teaching methods, assessment techniques, and subject matter.

The key points and characteristics of the latest version of the curriculum standards are presented below:

First, improving the whole language usability comprehensively: These updated standards place more emphasis on the development of students' general language skills, including speaking, listening, reading, writing, and viewing, as well as on the cultivation of their comprehensive language usability. Students' capacity to use language in everyday situations can be enhanced by thoughtful lesson planning and task organization.

The second aspect of the new standards is its emphasis on language and cultural integration. It is meant to foster students' cross-cultural communicative skills as well as their knowledge and comprehension of the cultures of English-speaking countries. It enhances students' cross-cultural communication abilities and sparks their enthusiasm for studying English by presenting relevant cultural backgrounds and real language resources.

Third, emphasizing students' autonomous and collaborative learning: the updated curriculum highlights students' individual viewpoints and motivates them to study on their own and engage actively in class activities. Product-oriented learning and cooperative group learning help students develop their problem-solving abilities and team spirit.

Fourth, information technology and network resource integration: The updated curriculum fully utilizes these resources to offer a wide range of teaching resources and learning tools. The efficiency of instruction and students' enthusiasm for learning have increased with the use of multimedia teaching, online learning platforms, and other ways.

7.2 Outlook on Future Trends in English Curriculum Reforms

In order to meet the demands of both social change and educational advancement, the English curriculum will continue to be reformed in the future. An outlook on the direction of upcoming changes to the English curriculum is provided below:

First and foremost, concentrate on developing creative thinking and useful skills: The future English curriculum will place a greater emphasis on developing students' practical abilities and creative thinking. Students will be motivated to participate in creative English learning practices and enhance their creativity and problem-solving skills by means of innovative teaching methods and practices.

Second, enhancing interdisciplinary integration: The English curriculum will place greater emphasis on interdisciplinary integration in the future, encouraging disciplinary cross-learning and the cultivation of comprehensive abilities. Students can

develop integrated thinking and extensive application abilities through project-based learning and interdisciplinary teaching design.

Thirdly, further the reform of teaching evaluation: the traditional test-oriented evaluation technique will be dropped from the future English course, which will advance the reform of teaching evaluation. It will put an emphasis on developing students' overall quality and competence as well as using a variety of assessment methods.

Twelve years ago, Professor Liu Runqing wrote a paper titled "On the Five Realms of a Lesson," which divided lessons into five realms. First, the lesson should at least be full of information. Second, the information should try to be facts. Third, the best way to turn facts into knowledge is to put them in a system to become knowledge edge. Fourth, the more ideal level is to let the knowledge be full of wisdom. Fifth, the most ideal realm is to raise wisdom to philosophy. It is hoped that educators will make an effort to enter these fields^[6].

7.3 Significance of Continuing and Deepening Curriculum Reforms

Curriculum reform is a crucial path for educational advancement and is vital to developing students' creative thinking, practical skills, and the overall quality. Expanding the scope of comprehensive curriculum reform steadily can advance education as a whole and raise student achievement levels and overall quality.

Simultaneously, the bulk of educators' support and joint efforts are needed to further advance curriculum reform. To ensure that curriculum reform is strongly supported, schools should provide a suitable learning environment and offer resource assistance. Teachers should also actively investigate new teaching methods that are matched to the requirements of students and current trends.

In conclusion, the release and implementation of the new 2017 version of the English curriculum standards for general senior high schools is a milestone for the development of English education. The future curriculum reform will continue to deepen and advance, making greater contributions to the overall development of students and the progress of society. As educators, teachers should always strive to become better teachers, incorporate the English core competencies into lessons, and cultivate socialist successors and builders who have a Chinese sentiment, an international perspective, and the ability to communicate across cultural boundaries for the sake of our homeland^[7].

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An Introduction to the Influence of Family of Origin on College Students' Mental Health

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Abstract: The research on psychological crisis of college students has attracted more and more attention from the society, and the reasons for the formation of psychological problems of college students have become the content of the research, in which the influence of the family of origin has become one of the mainstreams, and this paper analyzes the influence of the family of origin on the mental health of college students, and improves the effectiveness of the mental health education of the university body.

Keywords: Family of Origin; College Students; Mental Health Education

1. WHY STUDY THE IMPACT OF FAMILY OF ORIGIN ON THE MENTAL HEALTH OF COLLEGE STUDENTS?

Psychological assessment is carried out about one month after the start of the academic year for new university students

Mental health is an important foundation for the comprehensive development of individuals. Mental health education for college students is an important part of the ideological and political work of college students. In practice, many college students have psychological problems and symptoms in school, which can be traced back to their experiences in their families of origin, and most of the students' psychological problems are deeply rooted in their families of origin. Here, the influence of family of origin on the psychological health of college students is analyzed.

After the assessment, students who have a high score in the assessment or a high overall score will be interviewed, and it is found through the interviews that many of the students who have hidden psychological safety problems have most of their problems related to their families of origin. For example, some students from single-parent families have interpersonal barriers and some have adjustment problems. In the author's return visit to the students, there is a male student, Xiao A, whose father cheated on him in marriage and lived with his mother after his parents divorced, and who has long been suffering from the lack of a father's position, and has always been hateful to his father. Knowledge of the family of origin helps in the study of students' psychological problems[1].

In home-school cooperation, the attitude of the family

of origin has a great impact on the effectiveness of psychological treatment for students with psychological problems. Some students have psychological problems in school, and their parents do not recognize or cooperate with them, and in the face of parental avoidance, the student's problems instead show a serious tendency, whereas some parents who are able to take the initiative to cooperate with the school tend to make some improvement in the psychological problems of their students through cooperation with the home-school. For example, a boy B, during the school year, hallucinations and delusions of being victimized, began to go to the counselor said that someone wants to kill him, after the teacher visited and found that there is no phenomenon of the student said, contact the student's parents, the parents do not admit that the student has a psychological problem, but only to bring the student home to rest for a few days. After the student arrived at school, he went to the police station to report that someone was trying to murder him[2]. The school brought him back to the school from the police station and contacted the parents again, who were advised to take the student to a professional organization for diagnosis, but the parents not only refused to admit that their child had a problem, but also blamed the school for bullying their child. This lack of parental cooperation not only does not help the student's situation, but also causes certain problems to the school[3].

2. WHAT ARE THE EFFECTS OF FAMILY OF ORIGIN ON THE MENTAL HEALTH OF COLLEGE STUDENTS?

Economic impact economic poverty in the family of origin can affect students' interpersonal interactions and the development of low self-esteem. College students who have to live in school will be influenced by the people around them while cultivating their independence. Students are more likely to develop low self-esteem and depression if their finances are affected while they are in school. The financial situation directly affects the students' learning and living conditions in school, and in the long run, the students will also have great psychological pressure. The authors encountered in the work of the boys small C, the beginning of the school psychological assessment after the return visit, only to learn that the student's mother suddenly died before the beginning of the school year, the mother's sudden death not only makes the student psychological pressure, but also

because of the mother's death of the family to lose a source of financial resources, themselves and their older brother are going to school, their own high tuition fees internal guilt, mood has been low. The family of origin has an impact on the student's economy, whether the family has the correct guidance for the student's values, whether to establish a healthy outlook on money, consumerism will have a great impact on the students who have just started to live independently in the face of the new environment of the psychology.

Influence of Parental Relationship. Parental relationship in the family of origin is also one of the factors affecting students' mental health. In some single-parent families, such as those with divorced parents, the absence of a long-term father or mother role can also cause interpersonal barriers to students' emotional growth. In some families, although the parents are not divorced, the parents have a rigid relationship, and students who grow up in an environment of frequent quarrels will also have their character affected, which will trigger psychological problems when their own emotions are in trouble. The girl D, because of square phobia counseling, talk about understanding, because the student's mother had cheated on her husband, the parents have a rigid relationship, the student has always sympathized with their father, after going to college always feel that their family situation is different from others, always feel that walking on the road someone commented on their own, the symptoms of square phobia.

Effects of parenting style. parental emotional warmth is significantly and positively related to college students' mental health. When children feel the love, respect and understanding of their parents, it not only enhances their self-concept, but also promotes their psychological health. Parental punitive severity, refusal to deny, and over-interference and protection are significantly negatively correlated with mental health, and these negative family upbringing styles reflect a harsh attitude toward children, which leads to children feeling more pressure; while parents are over-interfering and protective, intervene too much, and do things for their children, which leads to children's lack of development of their abilities, resulting in inferiority complex, which leads to a low level of mental health. Self-concept is significantly positively correlated with mental health; the lower the self-concept, the more negative emotions students experience, which is detrimental to their healthy mental development. And those who have a higher evaluation of self have a higher level of initiative in interpersonal relationships and mental health.

In a coddling parenting style, once a student is unhappy in school and his or her parents fail to show up or solve the problem in time, the student's psychology is prone to adaptation problems. Students

who grow up in an overly disciplined parenting style, such students tend to be more rebellious once they are separated from their parents' lives. Boys small E, the college entrance examination scores are not very satisfactory, the school is not very satisfied with the examination to repeat, but the parents think that the examination of a university on, if repeat examination is not ideal, not only a waste of time, the child's blow is greater, resolutely did not let repeat but let the students on the students are not satisfied with the university. After the student enrollment on the resistance, and dormitory roommates relationship is not harmonious, and other students in the class also do not come together. Absenteeism playing games, teachers and parents contacted many times, in order to solve the problem, parents rented a house near the school to accompany.

3. HOW TO DEAL WITH STUDENTS WITH PSYCHOLOGICAL PROBLEMS DUE TO THE INFLUENCE OF THEIR FAMILIES OF ORIGIN?

Strengthening home-school cooperation mechanisms. Understanding of students' families of origin and strengthening students' parents' understanding of mental health. Once students have psychological problems, timely communication and cooperation with parents will help schools and parents work together to help students adapt to university life and get through the students' psychological crisis period.

Establishment of student psychological files. The files of students with potential safety risks are identified in the assessment visits, and through regular visits by counselors and careful observation by dormitory directors, class cadres and psychologists, the situation can be grasped in time in the event of a crisis in the student's life.

Strengthening mental health education for students. Courses on "Mental Health Education for College Students" are taught after students have enrolled in school. Through school mental health courses and mental health education campaigns, students are able to establish a correct world view, outlook on life and values, and are helped to complete their university life successfully and become physically and mentally healthy human beings needed for the development of the country.

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College Counselors Transcend the Humanistic Light of Algorithms

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Abstract: Artificial intelligence technology is profoundly reshaping the education ecology, and this paper proposes a "human-machine collaborative education model" to advocate the establishment of an education ecosystem with counselors as the core and AI as assistants. As the core guide of students' growth, college counselors are faced with the dual opportunities of efficiency improvement and role transformation. However, the limitations of AI mean that it cannot completely replace human counselors. This paper focuses on the unique competitiveness and role of counselors in the AI era, clarifies their irreplaceability, discusses the path of technology empowerment, and proposes strategies to deal with challenges, in order to provide theoretical support for the professional development of counselors in the new era.

Keywords: Artificial Intelligence Era, Core Competitiveness of College Counselors, Role Play, "Human-computer Collaboration".

1. INTRODUCTION

In the context of the era of artificial intelligence, it is of far-reaching significance to discuss the role of college counselors to promote the innovation and development of higher education and improve the quality of talent training. With the widespread application of artificial intelligence technology, the field of education is undergoing unprecedented changes, which not only changes the traditional teaching methods, but also brings new challenges and opportunities for the work of college counselors. Analyzing the core functions of counselors in the era of artificial intelligence will help provide more accurate, efficient and personalized education services for college education[1]meantimeStudying the role of college counselors in the era of artificial intelligence will not only help improve the professional quality and work efficiency of the counselor team, but also provide strong support for the innovation and development of college education. By in-depth discussion on the role positioning and function expansion of counselors in the era of artificial intelligence, we can better cope with the challenges in the field of education, grasp the development opportunities, and contribute wisdom and strength to the cultivation of high-quality talents. second, it helps to improve the overall quality and professional ability of the counselor team; Third, it will help promote the in-depth application and

innovative development of AI technology in the field of higher education.

2. THE CORE COMPETITIVENESS OF COUNSELORS: BEYOND THE THREE DIMENSIONS OF AI

2.1 Humanistic Care and Emotional Interaction: From "Data Feedback" To "Spiritual Resonance"

Although AI can analyze students' emotions with the help of emotion recognition technology (such as natural language processing), its feedback is essentially a stylized response based on algorithm logic, and lacks real empathy ability. In the era of the vigorous development of artificial intelligence, the humanistic care and emotional interaction ability of counselors is particularly valuable. While AI technology is capable of mimicking human emotions and behaviors in some ways, the role of the counselor becomes indispensable when it comes to deep emotional communication, understanding, and psychological counseling.

Many colleges and universities use AI psychological counseling systems, which can quickly identify emotional keywords such as anxiety and depression by analyzing the text information entered by students, and automatically push standardized comfort words and resource links. However, in practice, many students reported that they "felt like they were talking to a robot", and even experienced an increase in negative emotions. In contrast, through face-to-face communication, counselors are able to capture non-verbal signals such as micro-expressions and body movements outside of language. For example, when communicating with students, counselors may notice that the other party deliberately avoids eye contact, repeatedly rubs the corners of their clothes, and other details, so as to keenly perceive the psychological trauma that the student deliberately hides, and this intuitive insight into emotional changes is difficult for algorithms to achieve.

This support is not just a simple reassurance, but a professional guidance based on a deep understanding of the student's personality, background and current predicament. The student files established by the counselors in their daily work record multi-dimensional information such as family environment, growth experience, and academic performance, which are organically combined with real-time observations. For example, for students who also fall into self-doubt due to exam failures, counselors will adopt differentiated guidance

strategies according to the students' different personality characteristics and family backgrounds: for students who grow up in single-parent families and have sensitive personalities, focus on building emotional trust; For students who pursue perfectionism, cognitive behavioral therapy is used to help them adjust their irrational beliefs. When faced with academic pressure, interpersonal problems, or uncertain future plans, counselors can also use their professional knowledge and life experience to provide students with practical solutions and psychological counseling, and this kind of "tailor-made" care is the unique value of counselors' work.

2.2 Values Guidance and Moral Judgment: From "Information Integration" To "Value Molding"

AI can quickly integrate ideological and political education materials, but its algorithms cannot deal with the ethical dilemmas in the conflict of values.[2] Taking the algorithm recommendation system as an example, when faced with multiple value judgments of students from different cultural backgrounds on the same social event, AI can only mechanically output preset conclusions, and it is difficult to gain insight into the deep psychological motivations behind students' value confusion. In the era of artificial intelligence, the role of counselors in moral guidance and value shaping is becoming more and more prominent. With the advancement of technology, students are exposed to more and more complex information in their daily lives, and their values and behavioral habits are also imperceptibly affected. Especially under the dual influence of online culture and AI technology, students' worldview, outlook on life, and values are being reshaped. This reinvention involves both positive knowledge renewal and hidden loss of value. Fan risk. For example, the algorithmic push mechanism of short video platforms may lead students to fall into an information cocoon and solidify one-sided cognition. The ambiguity of identity in virtual social interaction can easily induce the weakening of the sense of moral responsibility. Therefore, the work of counselors is no longer limited to academic guidance and life care, but also covers the important area of moral guidance and value shaping. For example, AI can detect test cheating through image recognition technology, but when dealing with violations, counselors need to balance "rigid rules" with "educational flexibility". In the face of students who make mistakes for the first time, counselors should not only punish them according to school rules, but also dig out the stressors behind cheating through in-depth conversations, and give emotional guidance and growth assistance while maintaining the authority of the system, so as to transform punishment into an educational opportunity to reshape values.

2.3 Complex Decision-Making and Dynamic Intervention: From "Pattern Recognition" To "System

Governance"

AI is good at predictions based on historical data (such as academic warnings), but it is often rigid in the face of complex problems with multiple factors. Typical case: A student's abnormal behavior due to multiple problems such as dormitory conflicts, academic pressure, and frustration in love is classified as "high risk of social disorders" by the AI system, and the counselor formulates a comprehensive plan including psychological counseling, curriculum adjustment, and dormitory transfer through cross-departmental collaboration (Psychological Center, Academic Affairs Office, and Dormitory Management Office), and finally reverses the crisis. This kind of intervention relies on counselors' overall cognition of the campus ecology and resource integration ability, which is far beyond the single-dimensional analysis of AI. In the long-term work practice, the counselors have accumulated a deep understanding of various resources and operating mechanisms on campus, and can quickly mobilize the forces of all parties in complex situations to form a joint force of collaborative education. This kind of system governance ability is based on respect for students' individual differences, familiarity with the campus environment, and grasp of the laws of education, which cannot be replaced by AI's pattern recognition.

3. AI EMPOWERMENT, "HUMAN-MACHINE COLLABORATION"

With the continuous development of artificial intelligence technology, its application in the field of education management is becoming more and more extensive. For counselors, AI technology can not only help them optimize their workflows and improve work efficiency, but also provide more accurate educational counseling suggestions, thereby improving the quality of education. The practice of AI-assisted education management not only brings great convenience to the work of counselors, but also improves the accuracy and effectiveness of education management. Through the application of the intelligent student data analysis system, counselors can better grasp the learning status and needs of students, and provide more personalized and accurate educational counseling services. For example, with the help of big data analysis, counselors can quickly identify groups of students with learning difficulties and intervene in advance to help; Leverage AI's intelligent recommendation capabilities to push appropriate learning resources and career planning suggestions to students. If the system detects that a student's online class attendance rate has decreased for several consecutive weeks, the assignment submission has been delayed, and the accuracy rate has decreased, the counselor can intervene and communicate in a timely manner based on the early warning prompts, combined with the student's historical learning data and personal characteristics,

accurately locate the root cause of the problem, and formulate a personalized academic support plan for the student.[3]At the same time, the application of these systems can also promote the deep integration between counselors and artificial intelligence technology, and promote the innovation and upgrading of education management models. In the future era of artificial intelligence, counselors will continue to play their unique advantages and roles to help the development of education together with artificial intelligence technology.

4. CHALLENGES AND INCENTIVES OF COUNSELORS IN THE ERA OF ARTIFICIAL INTELLIGENCE

In the era of artificial intelligence, the challenges faced by counselors are multifaceted, and these challenges are not only from the development of technology itself, but also closely related to the changes in the social and educational environment brought about by the application of technology.[4]

The rapid development of AI technology requires counselors to constantly follow up and update their knowledge and skills. With the continuous progress of machine learning, big data analysis and other technologies, the application scenarios in the field of education are becoming more and more abundant. Counselors need to have an in-depth understanding of the fundamentals and scope of application of these techniques in order to better integrate them into their daily work. The introduction of AI technology also brings new challenges such as data security and privacy protection. In the field of education, large amounts of student data are collected and analyzed to provide personalized learning support and improve educational services. However, there are potential security risks during the processing and storage of this data. Counselors need to increase their focus on data security and understand relevant laws and regulations and best practices to ensure the security and privacy of student data.

In addition, the widespread application of AI technology may lead some counselors to have a sense of professional crisis, and how to overcome this psychology and actively adapt to technological changes is also an important challenge for counselors. In the face of sudden psychological crises of students, although AI can provide treatment plans based on past cases, it is difficult to cope with the dynamic changes and individual differences in the crisis. With long-term communication experience and keen intuition, counselors are able to flexibly adjust

intervention strategies at the crisis scene and provide the most timely and appropriate help to students. This ability to adapt and make decisions in complex situations is a key advantage for counselors in tackling AI challenges.

However, challenges and opportunities coexist, and the era of artificial intelligence has also brought many incentives to counselors. Technology empowerment enables counselors to be freed from tedious transactional work and devote more energy to the ideological guidance and growth and development of students. At the same time, working collaboratively with AI also provides counselors with opportunities to learn new technologies and expand their work horizons, which helps to improve their professional quality and comprehensive ability. In addition, the increasing demand for high-quality counselors also provides a broader space for the career development of counselors.

5. CONCLUSION

In the era of artificial intelligence, the competitive advantage of counselors is rooted in their "humanized" essence - awakening growth momentum with emotional resonance, shaping newcomers with value leadership, and solving complex problems with systematic thinking. In the face of technological innovation, counselors should not only embrace AI with an open attitude to improve efficiency and energy, but also consolidate their core competitiveness in continuous professional development. Only in this way can we realize the transition from "affairs manager" to "life coach" and write a new chapter in the new ecology of human-machine collaboration.

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Reform and Application of Teaching Mode in Higher Vocational Colleges Empowered by AI: A Case Study of the Electrical Automation Technology Major

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Abstract: Currently, artificial intelligence (AI) technology is developing rapidly, which has brought a great impact on the teaching of traditional higher vocational colleges. At the same time, it has also ushered in new opportunities. As an important base for cultivating high-quality technical and skilled talents, it is of great significance for higher vocational colleges to deeply integrate AI technology into teaching and effectively innovate teaching models, thereby improving the quality of student cultivation. This article takes the major of Electrical Automation Technology as the entry point, focuses on the current application, challenges and coping strategies of AI, aiming to further improve the teaching quality of higher vocational colleges.

Keywords: Artificial Intelligence, AI Technology, Teaching Mode, Higher Vocational Colleges

1. INTRODUCTION

In the digital age, AI technology is profoundly transforming the development models of various industries [1]. Vocational education, as the type of education most closely related to industries, is confronted with numerous opportunities and challenges [2].

As a core support of modern industry, the Electrical Automation Technology major plays an indispensable role in fields such as intelligent manufacturing and industrial mother machines. Higher vocational colleges shoulder the responsibility of talent cultivation, and course teaching is the forefront of talent cultivation in higher vocational colleges and the grassroots line of education and teaching [3]. Therefore, it is even more necessary to keep up with The Times and integrate AI into classroom teaching. To address the problems in the traditional teaching mode, such as the disconnection between theory and practice, the singularity of teaching methods, and the inability to precisely meet students' individualized needs, this will inject strong impetus into the reform and innovation of the teaching mode for the Electrical Automation Technology major, achieve intelligent and precise teaching processes, and cultivate more talents that meet the demands of the industry.

2. THE NECESSITY OF AI EMPOWERING THE REFORM OF THE TEACHING MODE FOR THE

ELECTRICAL AUTOMATION TECHNOLOGY MAJOR

2.1 Keep Up With the Demands of Intelligent Development and Enhance the Job Fit of Students

The concepts of Industry 4.0 and intelligent manufacturing are leading a major transformation in the equipment manufacturing industry supported by professional electrical automation services, which is moving towards high-end, intelligent and green development. Enterprises are paying more attention to the intelligence of products and the transformation and upgrading of production lines, and are eager to recruit talents who master AI technology. The introduction of AI into classroom teaching can enable students to closely follow the cutting-edge of the industry in advance [4], master technical skills such as intelligent control and big data analysis, enhance their employment competitiveness, and better adapt to the future workplace.

2.2 Break through the Traditional Teaching Mode and Enhance Teaching Quality and Efficiency

The teaching content of the Electrical Automation Technology major in higher vocational colleges involves knowledge such as circuit principles and automatic control. In traditional teaching, teachers need to spend a lot of time on lesson preparation, analyzing students' learning situations, and grading homework, etc[5]. Moreover, the traditional teaching method is difficult to transform abstract knowledge into a scope that students can easily accept. AI technology can vividly demonstrate the operation of circuits and the control process of systems through virtual simulation, intelligent animation and other means, helping students understand. Meanwhile, it can automatically grade homework and analyze students' learning situations, allowing teachers to focus more on optimizing teaching processes, designing teaching plans and providing personalized guidance to students.

2.3 Introduce Big Data Analysis Technology to Meet Students' Personalized Learning Needs

Students in vocational colleges have significant differences in their learning foundations and abilities. By leveraging AI technology and through a big data analysis system, by collecting learning behavior data such as students' study duration, completion of

after-class homework, and test scores, we can precisely analyze students' knowledge mastery, learning habits, and active learning abilities, and construct a precise learning profile. Provide students with customized learning paths, push suitable learning resources [6], stimulate students' learning potential, and achieve personalized education [7-8].

2.4 Build a Virtual Training Platform to Enhance the Effectiveness of Practical Teaching

Vocational education emphasizes practical teaching. AI technology can build highly realistic virtual training environments through virtual simulation technology, allowing students to conduct practical operations in virtual scenes and avoiding safety risks and equipment costs in actual operations. Meanwhile, AI can also provide real-time feedback on students' operation situations, offer precise guidance, and enhance students' practical skills.

3. APPLICATION PRACTICE OF AI IN THE TEACHING OF ELECTRICAL AUTOMATION TECHNOLOGY MAJOR

3.1 Construction of Intelligent Curriculum Resources

Innovative research and development of intelligent teaching materials: Utilizing AI technology to create intelligent teaching materials for electrical automation and embedding rich multimedia elements in the teaching materials. When explaining the principle of motor control, insert 3D animations to display the internal structure and operation process of the motor; In the chapter on automated production lines, virtual simulation experiments are linked to allow students to experience the operation and debugging of the production line in an immersive way. The textbook also features intelligent interaction functions. Based on students' answering situations, it automatically pushes extended knowledge points and consolidation exercises to meet the learning needs of students at different levels.

Intelligent optimization of online courses: By leveraging AI algorithms to analyze students' online learning behaviors, such as the duration of course video viewing, the number of pauses, and the content of questions, accurately identify learning difficulties and interest points. Based on this, adjust the sequence of the course content and optimize the explanation methods. For example, advance the PLC programming part that students are generally confused about and increase case demonstrations. By using AI speech recognition technology to add multilingual subtitles to courses, it is convenient for students from different backgrounds to learn.

3.2 Innovation of Virtual Simulation Practical Teaching Based On AI

High-simulation virtual training platform construction: Build a highly realistic virtual training platform for electrical automation, simulating real working scenarios such as smart substations and automated factory workshops. Students can perform operations such as installing, wiring, debugging and

fault diagnosis of electrical equipment on the platform. The AI system monitors the operation process in real time, immediately pops up a window to remind of incorrect operations and provides correction suggestions. After the operation is completed, a detailed assessment report is generated, covering aspects such as operation norms and skill mastery, to help students quickly improve their practical skills.

Intelligent robot collaborative training: Introducing intelligent robots to participate in practical training teaching. For instance, in industrial robot programming training, students control robots to complete tasks such as material handling and welding through programming instructions. Intelligent robots are equipped with sensors that can sense students' operation movements and provide real-time feedback, such as deviation prompts for arm movement trajectories, helping students accurately master programming skills and simultaneously cultivating their human-machine collaboration abilities.

3.3 AI-Driven Intelligent Tutoring and Precise Learning Evaluation

The intelligent tutoring system operates efficiently: An intelligent tutoring system for the Electrical Automation major has been developed. Students can ask questions through text or voice when they encounter problems during their studies. The system uses natural language processing technology to understand problems, relies on knowledge graphs to quickly retrieve relevant knowledge points, and provides detailed solutions and case demonstrations. For example, when students encounter logical errors when learning the design of electrical control systems, the system can accurately point out the root cause of the errors and provide design ideas and improvement plans.

Intelligent and comprehensive learning evaluation: By leveraging AI technology to integrate multi-source data such as students' classroom performance, homework completion, online learning behavior, and practical operation scores, a student learning profile is constructed. A comprehensive evaluation is conducted from dimensions such as knowledge mastery, skill application, and learning attitude to provide teachers with objective and precise analysis of students' learning situations, assist them in adjusting teaching strategies, and offer personalized learning suggestions for students.

4. THE CHALLENGES FACED BY AI IN EMPOWERING THE TEACHING OF ELECTRICAL AUTOMATION TECHNOLOGY MAJOR

The shortcoming of teachers' AI application ability: Some teachers have limited understanding of AI technology and lack the ability to integrate AI into teaching. It is difficult to give full play to the advantages of AI in instructional design and the organization of teaching activities, resulting in poor

teaching effects and hindering the advancement of teaching mode reform.

Data security and privacy risks: AI teaching applications require the collection of a large amount of students' learning data, and there is a risk of data leakage during the collection, storage, and transmission processes. Once the data is leaked, it will seriously infringe upon students' privacy and affect the teaching order and the school's reputation.

The construction cost of teaching resources is high: Developing high-quality AI teaching resources, such as intelligent textbooks and virtual simulation platforms, requires a significant investment of human, material and financial resources. For vocational colleges with tight funds, the cost of resource construction has become a bottleneck restricting the wide application of AI technology.

5. STRATEGIES FOR REFORMING TEACHING MODELS IN VOCATIONAL COLLEGES EMPOWERED BY AI

5.1 Strengthen AI Training for Teachers to Enhance Their Professional Qualities

Vocational colleges regularly organize teachers to participate in AI technology training, covering basic AI theories, the use of teaching tools, and AI-based teaching design, among other contents. Encourage teachers to participate in AI teaching practice projects and enhance their application abilities through practice. Invite industry experts and AI education technicians to give lectures and exchange activities to broaden teachers' horizons and update teaching concepts.

5.2 Improve the Data Security Management System

Establish a strict data security management system and clearly define the standardized processes for data collection, storage, use and sharing. Advanced encryption technology is adopted to encrypt student data to prevent it from being stolen during transmission and storage. Strengthen the management of data access permissions, set multi-level permissions, and only authorize personnel to access specific data. Regularly conduct data security audits to promptly identify and address potential security risks. Meanwhile, strengthen the education on data security awareness among teachers and students and enhance their prevention capabilities.

5.3 Multi-party Collaboration to Reduce the Cost of Resource Construction

Vocational colleges establish cooperation mechanisms with enterprises and research institutions to jointly develop AI teaching resources. Enterprises provide practical cases and technical support, research institutions contribute AI research and development achievements, and educational institutions offer teaching scenarios and demand feedback, achieving resource sharing and complementary advantages. The government has introduced policies to provide financial subsidies, tax

incentives and other support for the construction of AI teaching resources in vocational colleges, guide social capital investment, reduce the construction costs of colleges and universities, and promote the wide application of AI technology in teaching.

6. CONCLUSION

The empowerment of AI has brought unprecedented opportunities for the reform of the teaching mode of the Electrical Automation Technology major in vocational colleges, while also facing many challenges. By facing up to the necessity of reform, actively exploring the application path of AI, and effectively responding to challenges, vocational colleges can build a more dynamic and efficient teaching model and cultivate a large number of high-quality technical and skilled talents that meet the intelligent development needs of the electrical automation industry. In the future development, vocational colleges should continuously pay attention to the development trends of AI technology, constantly deepen teaching reforms, and provide a solid talent guarantee for the development of the industry.

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Research on Professional Development of Foreign Language Teachers under the Perspective of “AI+ Education”

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Abstract: In recent years, Artificial Intelligence (AI) has advanced rapidly and achieved many accomplishments. AI makes learning a foreign language more successful and efficient by giving students unique learning paths, real-time feedback, virtual conversation partners, personalized learning material recommendations, and the option for self-directed learning. It is sure that the use of AI technology has positive significance for improving teachers' teaching efficiency and reducing students' learning difficulty. AI-assisted teaching can enhance the application ability of AI technology in foreign language teaching, scientific research, and the comprehensive ability of teachers. In order to promote the professional development of foreign language teachers from the perspective of “AI+Education”, it is necessary to abide by the basic principles of autonomy and continuity. In addition, it is important to guide teachers to form self-development motivation and create a good environment for the professional development of foreign language teachers.

Keywords: “AI+Education”; Foreign Language Teacher; Professional Development

1. INTRODUCTION

AI is helping to improve education by providing personalized learning, managing learning progress, and analyzing learners' comprehension levels (Jin Meiyang, 2024)[1]. AI has been applied to image recognition, speech recognition, natural language processing and robotic technology. These improvements are bringing revolutionary changes to the whole society. “AI+Education” is a combination with broad development prospects. Its broader definition is to use AI technology to assist teaching, improve the efficiency of teachers' teaching, and reduce the difficulty of students' learning. Nowadays, many artificial intelligence products have been successfully implemented in the field of education. In most cases, artificial intelligence and machine learning in the field of education take virtual forms, rather than being directly reflected like robots. It will take on some roles to help students and teachers get more help from the educational experience. With the rapid development of science and technology, the renewal of teaching facilities is getting faster and

faster. Today, in the field of English teaching in many schools, artificial intelligence teaching platforms, machine translation, voice guidance, language recognition, and teaching evaluation technologies are becoming more and more mature. In daily teaching, the practical application of artificial intelligence technology in “AI+Education” has brought development opportunities and posed significant challenges to the work and teaching abilities of English teachers. Moreover, the professional development of foreign language teachers under the perspective of “AI+Education” should form correct concepts and awareness, actively learn the application knowledge and professional methods of AI technology in foreign language education, and while enhancing professional capabilities, continuously improve the effectiveness and development level of educational work, and reasonably use AI technology to improve their own professional work ability and level, so as to achieve the expected goals of foreign language education work.

2. LITERATURE REVIEW

2.1 Related Studies

An analysis conducted through the China National Knowledge Infrastructure (CNKI) and CiteSpace software reveals that the nodes for Artificial Intelligence and teacher professional development are the most significant, indicating a substantial body of research within these domains in the Chinese academic landscape. Lv Jianxiu (2021)[2] posited that advancements in artificial intelligence have redefined the professional development landscape for foreign language instructors at higher education institutions, presenting them with unprecedented challenges. With the personalized learning and feedback capabilities of artificial intelligence, teachers can teach more complex and abstract concepts while meeting students' emotional and social needs. Zhang Xiangjing and Li Xueyan (2024)[3] studied foreign language teachers from four universities were chosen as the research subjects. A questionnaire method was employed to investigate the current AI information literacy status of university foreign language teachers across five dimensions: AI information awareness, AI information knowledge, AI information skills, AI information ethics, and AI information literacy training. The findings indicate

that university foreign language teachers generally have good AI information awareness and ethics. However, their AI information knowledge is relatively limited, and there is a need to enhance the integration of AI technology with foreign language teaching. AI assists teachers in developing teaching resources, such as automatically generating teaching materials, exercises, and assessment tasks, thereby improving the efficiency of instructional design. An extensive review of international academic literature, facilitated by the CiteSpace tool, reveals that “artificial intelligence” and “teacher development” are prominent nodes within recent scholarly discourse. This suggests that the intersection of artificial intelligence and teachers’ professional advancement has emerged as a significant area of interest for global researchers. Since 2017, a marked increase in publications concerning these themes indicates a burgeoning research trend and a focal point of academic inquiry. Furthermore, artificial intelligence is shown to bolster practical skills such as writing and to offer a plethora of reliable, simulated dialogue platforms designed to refine oral English competencies, thereby amplifying the efficacy of English language instruction and augmenting students’ communicative abilities.

2.2 The Significance of Foreign Language Teachers’ Professional Development under The Perspective of “AI+ Education”

On July 20th, 2017, the State Council of China promulgated the Development Plan of the New Generation Artificial Intelligence (2018)[4] outlined the guiding principles, strategic goals, key initiatives, and safeguard measures for the advancement of China’s new generation artificial intelligence by 2030. This plan aimed to establish a first-mover advantage in the field and accelerate the nation’s transformation into an innovative country and a leading global force in science and technology. The integration of AI technology into foreign language education by educators poses a significant challenge: without concurrent acquisition of information technology expertise, there is a risk that the development of education and the application of AI could be adversely affected. From the perspective of “AI+Education”, the professional development of foreign language teachers can be significantly enhanced by actively embracing AI technology, thereby augmenting the efficacy of foreign language instruction. Artificial Intelligence is not meant to take the place of teachers; instead, it functions as a supporting and supplementary tool. By doing so, teachers can offer more tailored guidance to students and oversee the learning process more efficiently, which in turn enhances the quality of foreign language education. AI has been at the forefront of driving innovations in foreign language education, yet the core of such innovation still rests with the role of teachers. Only when AI and teachers complement

each other and work in collaboration can foreign language education go beyond traditional teaching models, delivering more effective and personalized learning experiences to learners.

3. PRINCIPLES OF FOREIGN LANGUAGE TEACHERS’ PROFESSIONAL DEVELOPMENT UNDER THE “AI+EDUCATION” PERSPECTIVE

To effectively advance foreign language teachers’ professional development within the “AI+Education” framework without obstacles, it is crucial to follow foundational principles that ensure continuous enhancement of their competencies in the digital educational space: teachers must embrace self-directed learning to independently acquire AI educational skills aligned with foreign language teaching principles, proactively integrating AI technology into classrooms to build strong information literacy and adapt to the AI-driven educational ecosystem, while also recognizing that professional growth is an ongoing journey requiring sustained engagement with evolving technologies, continuous renewal of knowledge and pedagogical approaches, and proactive adaptation to rapid AI advancements to maintain instructional innovation and improve both teaching and research capabilities. Realizing educational revolution, overcoming technological obstacles, and elucidating ethical links are the three areas in which the practical implementation of “AI + teachers” collaborative teaching will endeavor. By bridging the gap between theoretical models and teaching methods, this aims to give instruction new life(Zhou Qin and Wen Xinyue, 2020)[5].

4. APPROACHES TO THE PROFESSIONAL DEVELOPMENT OF FOREIGN LANGUAGE TEACHERS FROM THE “AI+EDUCATION” PERSPECTIVE

For the advancement of foreign language teachers’ professional development within the “AI+Education” paradigm, a deliberate selection of strategic methodologies is essential. It is crucial to nurture a strong internal drive for self-improvement and to construct an external environment that is conducive to growth. This comprehensive approach should aim to cultivate a variety of professional growth pathways and to establish best practices for professional development in the modern era.

4.1 The Internal Path for Teachers to Proactively Enhance AI Skills

To proactively boost their AI skills, teachers should first foster a correct AI education mindset: understand AI’s role in transcending traditional education, integrate it into teaching, self-study, assessment, and communication, adapt to the “AI+Education” paradigm, and master online-offline blended teaching skills. They need to enhance self-directed learning capabilities, driven by intrinsic motivation rather than external pressure, with self-assessment of their AI proficiency to target learning based on their strengths,

weaknesses, and needs. Additionally, teachers should cultivate reflection on AI use in classrooms, evaluate objectively, take corrective actions, devise professional development plans, and utilize platforms and tools (e.g., Weibo, WeChat) to document teaching, share content, and communicate with students and parents under “AI+Education”. Through systematic use of AI technology, teachers can not only augment their professional capabilities but also enhance the efficacy of their professional development through the processes of reflection and self-improvement [5].

4.2 Creating a Conducive Environment for Professional Development

To foster the professional development of foreign language teachers under the “AI+Education” paradigm, it is imperative to guide them in developing internal motivation and to cultivate a supportive environmental atmosphere. This will enable the AI educational specialization of foreign language teachers to flourish through the influence and “AI+Education” utilization of the external environment [6].

Building an external ecosystem to facilitate teachers’ AI skill improvement, a robust external ecosystem involves emphasizing intensive training: using MOOCs for online-offline integration, with initial assessments to provide tailored resources and offline practical exchanges for deeper AI teaching tech understanding. It also includes cultivating a networked educational research environment, enabling teachers to use AI for data analysis, with institutions establishing research databases to integrate student-AI interaction data into research, and promoting info exchange via technologies. Additionally, online platforms should foster professional learning communities where teachers collaborate, discuss AI applications in teaching, jointly research curriculum core content and syllabi under AI, enhancing their AI skills and professional development. Collective discussions on the application models of AI educational technology and the resolution of key issues in the educational process facilitated by AI are essential. With the support of a professional development learning community, foreign language teachers can more effectively acquire AI educational knowledge and skills, achieving commendable professional development objectives.

5. CONCLUSION

With “AI+Education” permeating teaching, foreign language teachers’ professional development has drawn wide attention. They need to address its opportunities and challenges, master educational information technologies, renew pedagogical philosophies, engage in teaching reforms, and explore new paths for teaching, research, and learning to advance professionalism-only then can they effectively apply AI in teaching and research. In conclusion, integrating AI into foreign language education is challenging yet promising; proactive preparation lets teachers adapt, shape the educational landscape, and the future lies in embracing change, innovating, and leading intelligent, personalized teaching.

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