Research on the Cultivation of Intercultural Communicative Competence of Chinese Engineering Science and Technology Talents under the "Belt and Road" Initiative

Dr. Hang Zhang, Jining Normal University

Hang Zhang is working as a lecturer in Jining Normal University,China. She received her Bachelor's degree in English from Tianjin Foreign Studies University in 2002, and Master's degree in Higher Education from Guangxi Normal University in 2009, and PH.D in Educational Economics and Management in Beihang University in 2021. She studied as a visiting scholar in School of Education, Indiana University Bloomington,USA. Hang Zhang's academic interests include global comparative education, engineering education, higher education administration and entrepreneurship education. She possesses rich teaching and training experiences in higher education.

Xinyao Song

Xinyao Song is a master's student at the Graduate School of Education, Beijing Foreign Studies University, Beijing, China. She received B.A. in North China Institute of Science and Technology. She is interested in comparative higher education.Now her research interest focuses on the digital education in higher education.

Dr. Ming Li, Beijing Foreign Studies University

Ming Li is an assistant professor at the Graduate School of Education, Beijing Foreign Studies University, Beijing, China. He received B.A. in Qingdao Agricultural University, M.Ed. in Shandong Normal University, and Ph.D. in Beihang University. From March 2013 to June 2013, he studied in School of Engineering Education at Purdue University as a visiting scholar. After obtaining the PhD title, he worked as a postdoctor at the Institute of Education, Tsinghua University. He is interested in higher education administration as well as engineering education. Now his research interest focuses on the quality assurance in higher education, especially quality assurance in engineering education.

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Abstract

With the continuous promotion of the "Belt and Road" initiative, the economic, political, cultural and other cooperation between China and countries along the "Belt and Road" have been increasingly deepened. The engineering and technological talents involved in the construction of engineering projects in countries along the "Belt and Road" are the core stakeholders. The cultivation of intercultural communicative competence for engineering and technological talents is conducive to the orderly and high-quality implementation of initiative. However, due to the different cultures of countries along the "Belt and Road", most countries are significantly different from British and American cultures, and the traditional intercultural communicative competence adapted to British and American cultures cannot meet the needs of the initiative. The government, educational institutions, and enterprises urgently need to take active measures to cultivate engineering and technological talents with intercultural communicative competence to adapt to the new situation. In the context of the continuous promotion of the "Belt and Road" initiative, this research interviews 15 stakeholders from five selected enterprises involving the engineering business with countries along the "Belt and Road". It attempts to study on the intercultural communicative competence of engineering and technological talents, analyzes the current situation of the cultivation of engineering and technological talents' intercultural communicative competence, summarizes the current problems and reasons, and attempts to propose solutions.

Key words: intercultural communicative competence; engineering and technological talent; "Belt and Road" initiative; China

1. Introduction

The "Belt and Road" initiative[①] is a major initiative and strategic idea for China to base on its own strengths and look to the world, actively plan a panoramic opening up, tap the ancient spirit of the Chinese Silk Road, and actively assume the responsibility of a country with great power. With the continuous promotion of the "Belt and Road" initiative, China's economic, political, cultural and other cooperation with countries around the world is deepening. In the context of China's steady promotion of the "Belt and Road" initiative, and in the era of focusing on the implementation of "*Made in China 2025*[②]" and "*New Engineering*[③]", improving the intercultural

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[①] In September and October 2013, Chinese President Xi Jinping proposed the major initiatives of jointly building the Silk Road Economic Belt and the 21st Century Maritime Silk Road during his visits to Central and Southeast Asian countries. These initiatives are abbreviated as the "Belt and Road" Initiative.

[②] "*Made in China 2025*" is the first ten-year action plan for the Chinese government to implement

communicative competence of engineering and technological talents can not only provide high-level engineering professionals for China's industrial transformation and upgrading, but also help to tell a good story of China and promote "*Made in China*" to go global. China urgently needs engineering, technology, and human resources with good intercultural communicative competence in order to communicate smoothly with nationals of countries along the "Belt and Road", and effectively carry out practical cooperation in infrastructure, production capacity cooperation, trade exchanges, cultural exchanges, and other fields. In order to ensure practical cooperation between China and countries along the "Belt and Road" in infrastructure, production capacity cooperation, trade and investment, people to people and cultural exchanges and other fields, and achieve common economic and cultural prosperity, engineering and technological talents should have good intercultural communicative competence that can adapt to the cultural characteristics of the country where the project is located. This research focuses on the intercultural communication ability of Chinese engineering and technological talents under the "Belt and Road" initiative, examines the actual effect of intercultural communication of Chinese engineering and technological talents, and proposes strategic pathways to cultivate the intercultural communicative competence of Chinese engineering and technological talents under the "Belt and Road" initiative. Specifically, this research attempts to make a novel contribution to the intercultural communicative competence of engineering and technological talents by offering a new framework, and provide empirical findings that fill existing gaps in literature.

2. Literature Review

For a long time, the academic community has been enthusiastic about exploring the cultivation of general intercultural competence, especially intercultural communicative competence. The composition of intercultural competence is relatively complex, and scholars at home and abroad have different expressions.[1][2][3][4][5] Although different scholars have different understandings of intercultural communicative competence, research mainly focuses on three aspects: intercultural awareness, intercultural sensitivity, and intercultural communicative behavior. Intercultural awareness is the self-awareness of intercultural communicative skills, which is an individual's understanding and recognition of cultural customs. It involves the commonalities of human behavior and the differences between different cultural patterns. People's self-awareness of cultural customs affects their own lives, thinking, and values, as well as their respect and understanding of cultural differences.

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the strategy of building a strong manufacturing country. "*Made in China 2025*" proposed to achieve the strategic goal of becoming a strong manufacturing country through a three-step approach.

③ To proactively respond to the new round of technological revolution and industrial transformation, since February 2017, the China Ministry of Education has actively promoted the construction of new engineering disciplines, and has successively formed the "*Fudan Consensus*", "*Tianda Action*" and "*Beijing Guidelines*", fully exploring the formation of a Chinese model and experience leading global engineering education.

Intercultural sensitivity is an emotional dimension in intercultural communication, mainly referring to people's sensitivity to their own and different ethnic cultures, the positive emotions that individuals possess to understand and appreciate cultural differences, and the positive emotional responses generated in interactions with people with different cultures. Intercultural communicative behavior is the ultimate destination of intercultural awareness and sensitivity. Intercultural communicative behaviors include information skills, appropriate self-disclosure, flexibility of behavior, interactive management, social skills, etc., which are effective communication skills that people need to possess when engaging in intercultural communication.

At present, there are not many achievements in studying the intercultural competence of engineering talent, but the viewpoints of the following scholars have important reference value. Maken believes that intercultural competence is the core of the soft power of engineering talent, as their communication and exchange abilities are reflected not only in their performance in the same culture, but also in their cooperation in a multicultural context.[6] In the process of promoting the "Belt and Road" initiative, engineering and technological talents participating in the project construction are the main force, and the cultivation of their intercultural communicative competence is particularly important. Relevant research has also attempted to explore, for example, in view of the long-term lack of engineering and scientific talent support in the countries along the "Belt and Road", it is proposed to develop a Chinese program of engineering education "going out" around the "Belt and Road", deepen the social responsibility and global governance ability of colleges and universities. The fundamental basis for intercultural communication still relies on the micro individuals within the Chinese engineering talent to achieve it in the actual engineering implementation process.

In addition, when discussing the issue of international engineering science and technology talent cultivation under the "Belt and Road" initiative, relevant research will also involve exploring intercultural communicative skills. For example, Zhang Xiongwu and Xie Ran believe that international engineering and technological talents qualified for the "Belt and Road" construction need to have core abilities such as engineering and technical ability, intercultural communicative ability, innovation and entrepreneurship ability. [7] Among them, the intercultural communicative competence in the country where the project is located is crucial to the realization of the vision of the "Belt and Road" initiative. There are more than 60 countries along the "Belt and Road", which is a typical multi type country, multi-ethnic and multi religious gathering area in the world. It is urgent to cultivate talents who are capable of intercultural communicative skills and possess broad social and humanistic knowledge in the country where the project is located.

At present, there are different views in the academic community on the connotation and dimensions of intercultural communicative competence. For example, Wang Xinmei, Wang Sunyu etc. believe that intercultural competence is a broad spectrum of abilities and categorize it under the category of engineering technology soft power,

which includes three dimensions: attitude, cognition, and skill.[8] The analysis of intercultural competence of Chinese engineering staff is based on the dimensions of intercultural attitudes, cognition and skills. Attitude can be understood as respect, openness, and tolerance, being able to think from different perspectives in cooperation, and being willing to communicate and negotiate; cognition, that is, possessing basic knowledge of regional national culture, traditions, and laws and regulations; skill refers to foreign language ability, observation ability, comprehension ability, analytical ability, evaluation ability, etc. The intercultural competence of engineering staff needs to be improved in three aspects: attitude awareness, knowledge, and skills, in order to achieve the goal of cultivating their intercultural competence. Wang Luyao, Chen Jin, and Qu Guannan believe that the cultivation of intercultural communicative skills should at least include the following aspects: multiple language abilities, understanding of multiple cultural traditions, adaptability to multiple institutional norms, and tolerance of multiple religious beliefs.[9] Zhou Guangyi and Li Qingping pointed out that the "Belt and Road" Initiative has put forward new requirements for the cultivation of talents' intercultural communicative ability: to establish an inclusive awareness of intercultural communication, to have the self-learning ability to learn intercultural communicative knowledge from countries along the "Belt and Road", to have the awareness of promoting Chinese culture to the people of countries along the "Belt and Road", and to have global communication skills. [10] Pan Rongcheng focuses on the issue of translation ability in intercultural communicative skills. In the context of promoting the of the "Belt and Road" construction, the engineering and technical talent involved in the construction are important carriers for spreading Chinese culture to countries along the line. Translation ability is one of the fundamental components of international communication ability, and it is also one of the intercultural communicative skills that international engineering talents must master.[11] From the perspective of international communication capacity building, universities must not only cultivate the professional and technical abilities of engineering talents, but also attach importance to cultivating their intercultural communicative abilities, including translation ability, to build them into composite international engineering talents who are proficient in both professional technology and cross language communication.

To sum up, the current research on the intercultural communicative competence of engineering and technological talents under the "Belt and Road" initiative is relatively insufficient. Research on this topic in both domestic and international academic circles is still in the stage of theoretical exploration. Although some studies have tried to explore the ability cultivation of engineering and technological talents under the "Belt and Road" initiative, they have not yet explored the issue of intercultural communicative competence cultivation in depth. However, the exploration of intercultural communicative competence in the academic community can undoubtedly provide a certain theoretical basis and guiding framework for this research. Due to the increase of relevant international engineering activities such as the "Belt and Road", the research on the intercultural communicative competence of Chinese engineering and technological talents is becoming increasingly important. On the basis of the

existing research results at home and abroad, this research conducts an empirical study on the intercultural communicative competence of engineering and technological talents along the "Belt and Road", and attempts to construct relevant theories.

3. Research Questions

This research mainly focuses on the following three core questions. First, what is the status quo of the intercultural communicative competence of Chinese engineering and technological talents under the "Belt and Road" Initiative? Second, what new requirements does the "Belt and Road" Initiative put forward for the intercultural communicative competence of Chinese engineering and technological talents? Third, how to cultivate the intercultural communicative competence of Chinese engineering and technological talents, in order to further promote the "Belt and Road" initiative?

4. Research Methods

4.1 Literature analysis

The research attempts to collect and study literature and materials related to the cultivation of engineering and technology talent abilities, especially intercultural communicative competence, both domestically and internationally. From the perspectives of education, policy studies, linguistics, history, and other disciplines, the research will analyze and explore the historical background, implementation path, and influencing factors of the cultivation of engineering and technology talent abilities, especially intercultural communicative competence. Specifically, the search of academic papers is based on (China National Knowledge Infrastructure, CNKI), focusing on three keywords: "Belt and Road", "intercultural communicative competence", and "engineering and technological talent". The retrieval of policy reports is based on authoritative websites, such as the "Belt and Road Portal-BRI Official Website"[12]; professional databases, such as the "Belt and Road" Database[13]; policy documents related to the "Belt and Road" initiative, such as the *Promoting the Education Action of the Belt and Road*; research reports, such as the *"Belt and Road" International Initiative and Academic Value Report*; development reports, such as the *"Belt and Road" Construction and Development Report (2016-2022)*, and annual reports, such as the *"Belt and Road" Annual Report (2016-2019)*.

4.2 Qualitative interview

In essence, intercultural communicative competence is a comprehensive ability, such as cognitive ability, recognition ability, and adaptability to different cultural environments. Intercultural communicative competence is also the adaptability of people to communicate in different language and cultural environments. This research suggests that intercultural communicative competence refers to the comprehensive

abilities possessed by people from different cultural backgrounds in effective communication, including intercultural cognition, attitude, and skill. The design of the framework for intercultural communicative competence of engineering and technological talents in this research is based on the general theory of intercultural communicative competence. Taking into account the characteristics of engineering and technological talents and the latest achievements in research on intercultural communicative competence of engineering and technological talents, a three-dimension and nine-element framework of intercultural communicative competence was preliminarily constructed (as shown in Figure 1).
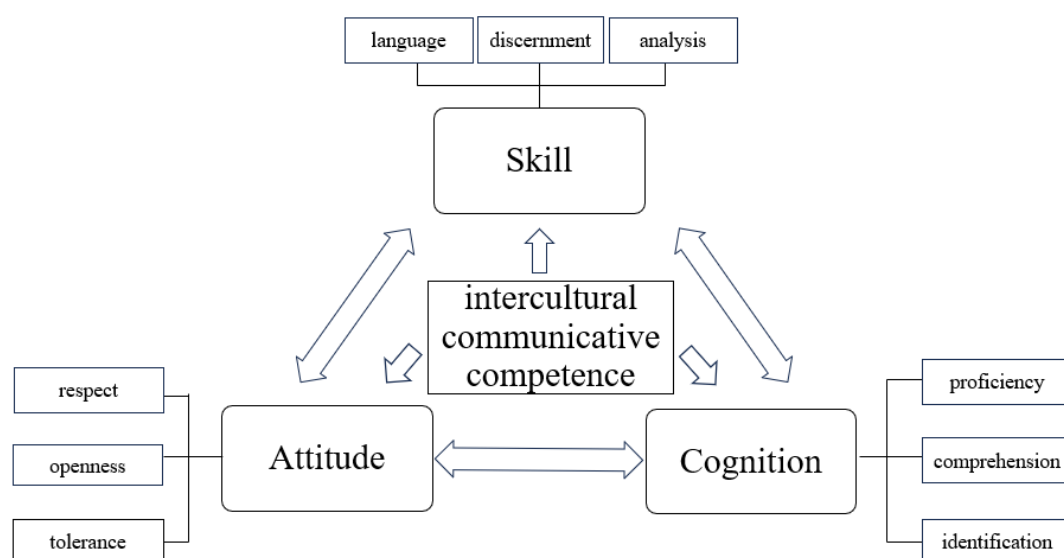

Figure 1 Framework of Intercultural Communicative Competence of Engineering and Technology Talents

Among them, the dimension of "attitude" includes three elements: respect, openness, and tolerance. "Respect" refers to recognizing cultural diversity and consciously adopting a respectful and appreciative attitude towards the culture and values of the target country. "Openness" refers to engaging in intercultural learning, maintaining a positive and open attitude towards the culture of the target country, and being willing to collaborate in an intercultural environment. "Tolerance" refers to recognizing cultural diversity and maintaining tolerance towards the differences between Chinese and foreign cultures. The dimension of "cognition" includes three elements: proficiency, comprehension, and identification. "Proficiency" refers to understanding the basic knowledge of the target country's politics, history, geography, culture, etc. "Comprehension" refers to understanding the cultural connotations and worldview of the target country. "Identification" refers to identifying and adapting to the differences between Chinese and foreign cultures. The dimension of "skill" includes three elements: language, discernment, and analysis. "Language" refers to the use of foreign languages to communicate and interact with engineering and technological talents in the target country. "Discernment" refers to interpreting the attitude and

reaction of the target country's engineering and technology talent by listening to their tone and observing their facial expressions. "Analysis" refers to evaluating and analyzing different cultural phenomena and their underlying reasons, and seeking the correlation between cultural phenomena and local social systems.

The research is planned to conduct interviews with the core stakeholders of the "Belt and Road" initiative while extensively collecting data, so as to grasp the uniqueness and complexity of the cultivation of intercultural communicative competence of engineering and technological talents, and thus have a deeper understanding of the cultivation of intercultural communicative competence. The interviews were mainly conducted through telephone and email interviews (as shown in Table 1). Specifically, this research fully considered the representativeness of the research subjects and selected overseas human resources department heads, overseas business managers, and overseas business engineers from five enterprises as the interviewees (as shown in Table 1). These five enterprises all have large engineering business volume, wide range of engineering fields, and rich experience in engineering talent management in the "Belt and Road" region. This research relies on the engineering practice of Chinese enterprises in the process of going globally, and conducts interviews on the actual situation, ability requirements, and training suggestions of overseas engineering and technology talents.

Table 1 Basic Information of the Interviewee and Their Affiliated Enterprises

Interviewee	Enterprise Name	Engineering Fields	Core Business
A-1	A	railway, highway, bridge, real estate, municipal, etc.	engineering contracting, design, consulting, import and export
A-2			
A-3			
B-1	B	railway construction and its surrounding businesses	engineering design, general contracting, investment, etc.
B-2			
B-3			
C-1	C	roads, bridges, ports, airports, real estate, industrial parks	engineering contracting, investment, development, and operation
C-2			
C-3			
D-1	D	vehicles, machinery, electronic equipment, etc. of rail transit	R&D, design, manufacturing, repair, sales, leasing, consulting, investment
D-2			
D-3			
E-1	E	oil and gas	sales, transportation, trade, engineering contracting, manufacturing, finance
E-2			
E-3			

Note: 1- human resources department heads
      2- business managers
      3- business engineers

After obtaining the consent of the respondents, all telephone interviews were recorded. Before coding, a coding framework was established by combined literature review

and expert consultation, with attitude, cognition, and skill as core elements. Vocabulary statistical frequency was then extracted for classification analysis. To understand the actual situation of engineering and technological talents in real scenarios, this research converted three dimensions into specific interview questions (as shown in Table 2).

Table 2 Interview Outline of the Current Status of Intercultural Communicative Competence

Demontion	Element	Question
Attitude	● Respect-recognize cultural diversity, consciously adopt a respectful and appreciative attitude towards the culture and values of the target country; ●Openness-engage in cross-cultural learning, maintain a positive and open attitude towards the culture of the target country, and be willing to collaborate in a cross-cultural environment; ●Tolerance-recognize cultural diversity and maintain tolerance towards differences between Chinese and foreign cultures	1.How do you get along with the locals? Please provide specific examples. 2.Did you pay attention to the local cultural customs before your first visit to this country? How to pay attention? 3.How do you view the cultural values differences between local people and Chinese people?
Cognition	●Proficiency-familiar with the basic knowledge of the target country's politics, history, geography, culture, etc.; ●Comprehension-understand the cultural connotations and worldview of the target country; ●Identification-recognize and adapt to cultural differences between China and foreign countries	4.Do you have knowledge about the local society, economy, history, culture, and other aspects? Please provide specific examples. 5.Can you talk about the characteristics of the local people's lifestyle, work style, etc.?

Skill	●Language-use foreign languages to communicate and interact with engineering and technological talents from the target country; ●Discernment-interpret the attitude and reaction of the target country's engineering and technological talents by listening to their tone and observing their facial expressions; ●Analysis-evaluate and analyze different cultural phenomena and their underlying reasons, and seek the correlation between cultural phenomena and local social systems	6. Will you use your foreign language communication skills comprehensively to ensure the smooth implementation of engineering projects? 7.Can you understand the locals' meaning from their tone and expressions? 8.Will you adjust your speaking style and behavior to suit the local people? How was it done?

5. Research Findings

5.1 Basic status of intercultural communicative competence of the "Belt and Road" engineering and technological talents

5.1.1 Technical dimension

(1) Linguistic competence

Linguistic competence is mainly manifested in the communicative subject's awareness of the importance of foreign language, and the competence of communicating and interacting with engineering and technological talents in the target country using foreign languages. The implementation of the "Belt and Road" initiative requires a large number of international talents in engineering, trade, digital technology and other fields. Although engineering and technological talents have strong professional skills, their ability to effectively communicate and engage in industry dialogue in the common languages of countries along the "Belt and Road" is still weak.[14] Influenced by the concept of exam-oriented teaching, traditional Chinese foreign language teaching and research focus more on grammar error analysis, vocabulary learning, understanding and expression of sentence structures, and the efforts to cultivate learners' intercultural communicative competence are insufficient. The phenomenon of engineering and technological talents applying Chinese expression habits and cultural thinking to foreign cultures is quite common, resulting in improper use of language in intercultural communication, misunderstandings, and even adverse effects on economic and trade cooperation. In

recent years, although the cultivation of intercultural communicative competence has received increasing attention, the ability of engineering graduates to communicate in professional fields using English is still relatively weak, and the current situation of cultivating intercultural communicative competence is still not optimistic. [15]

In addition, many non-English speaking countries along the "Belt and Road" involve many minor languages. At present, higher education institutions in China are at the exploratory stage of cultivating students' intercultural communicative competence suitable for the cultural characteristics of countries along the "Belt and Road". The current graduates have relatively weak linguistic competence in the minor languages of the target country where the engineering projects are located, are not very familiar with local laws, regulations, and customs, and are unable to communicate professionally in the local common language. Their competence of engaging in intercultural communication with citizens of countries along the "Belt and Road" is also weak. [16]

This pessimistic linguistic competence has also been confirmed by the respondents. When asked "*Will you use your foreign language communication skills comprehensively to ensure the smooth implementation of engineering projects?*", the respondent stated that in situations where language communication is not smooth, they can only understand the other people's meaning by feeling their tone and pace, or express their intentions through body language and other means. "When we first arrived overseas, we could only communicate in simple English and used a lot of body language. However, there were still significant barriers to body language communication, and we needed to use translation at critical moments, fearing incomplete understanding." (A-3)

In response to this issue, more and more Chinese enterprises have realized the importance of linguistic competence and regarded it as a necessary skill for expatriate engineering and technological talents. Some enterprises strive to create a language learning atmosphere and motivate employees to improve their linguistic competence. "Language is a very important tool and medium for us. To cope with the development of internationalization, enterprises should create a good language learning environment, strengthen language proficiency exams, and fully stimulate employees' learning enthusiasm through various rankings and rewards." (A-1)

(2) Discernment competence

Discernment competence is mainly manifested in the communicative subject's interpreting other people's attitude and reaction by listening to their tone and observing their expressions. When asked "*Can you understand the locals' meaning from their tone and expressions?*", the respondent stated that they can adjust their expression through listening and observation, which helps to avoid conflicts and solve problems. "After a period of contact, I am able to feel their emotions through tone and

other means. Over time, I understand them and know their intentions. Therefore, I try to adjust my expression to avoid conflicts." (C-3)

(3) Analytical competence

Analytical competence is mainly manifested in the communicative subject's competence of analyzing and evaluating different cultural phenomena and their underlying reasons, searching for deep-level correlations between cultural phenomena and local social systems, and making reasonable explanations for cultural phenomena. When asked "*Will you adjust your speaking style and behavior to suit the local people?*", the respondent stated that they not only pay attention to the tone differences between people of different nationalities in communication with leaders, but also analyze and evaluate the reasons behind cultural phenomena from the perspective of local social systems, and then reasonably explain the communication strategies of people in these countries. "Bohemia speak politely and peacefully to their leaders, with an equal tone and intonation. They do not consider themselves servants of their leaders. In contrast, Indians have an absolute obedience attitude towards their leaders and speak in a low voice, which is related to India's strict hierarchical system." (D-3)

5.1.2 Attitude dimension

(1) Respect

Respect is mainly manifested in the communicative subject's respect and understanding of religious beliefs. When it comes to religious beliefs, most respondents directly expressed "respect", and understood the "devoutness" of local people's religious beliefs. "Pakistan believes in Islam, worships regularly, and is very devout. We must respect it, otherwise it may cause religious conflicts." (E-3)

The respondents' respect for the culture of foreign countries is also reflected in getting along well with the locals and establishing friendly and equal relationships. When asked "*How do you get along with the locals?*", the respondents described in a pleasant tone, expressing their positive experience of working and living in the "Belt and Road" countries. "We get along very well with Indian engineers, often chatting together and supporting each other in our work." (D-3)

The establishment of this friendly relationship is largely based on Chinese enterprises actively building cultural exchange platforms, such as conducting social welfare activities, skill training, cultural and sports activities in the region where the engineering projects located.

(2) Openness

Openness is mainly manifested in the communicative subject's actively learning the

cultural knowledge of the "Belt and Road" countries. When asked "*Did you pay attention to the local cultural customs before your first visit to this country?* ", most respondents stated that they would actively collect information and pay attention to the cultural, religious, legal, and other knowledge of the target country before being dispatched. "Before going there, I would check these customs and habits myself on Baidu. If I want to offend someone, it can easily cause conflicts." (D-3)

In addition to personal openness, corporate training plays an important role in broadening the international vision of expatriates. All respondents will receive intercultural knowledge training before being dispatched, indicating that Chinese enterprises and employees maintain an open attitude towards the culture of the target country. "The enterprise attaches great importance to the cultivation of intercultural competence, and all talents will receive cultural training before being dispatched. In the early stage, when the dispatched talents encounter difficulties, they will summarize and form written materials as training materials, accumulate more and more, and help the later ones adapt to the local culture as soon as possible." (C-1)

(3) Tolerance

Tolerance is mainly manifested in the communicative subject's tolerance and understanding of significant cultural differences and conflicts between foreign countries and China. The respondents do not avoid the cultural differences, which have brought them conceptual impact and caused work problems. When asked "*How do you view the cultural values differences between local people and Chinese people?*", the respondents indicated that they were able to avoid conflicts by actively adapting to the culture of the target country or adopting a compromise approach to resolve conflicts, demonstrating a tolerant attitude. "There are some conflicting ideas in work, because foreigners have different ways of thinking. We have both persistence and compromise, and we can always solve problems." (B-3)

5.1.3. Cognitive dimension

(1) Proficiency competence

Proficiency competence is mainly manifested in the communicative subject's competence of grasping basic information about the local society, economy, history, culture, and other aspects. Among them, specific cultural information such as laws and regulations, technical standards, etc. are often the difficulties and problems encountered by enterprises and individuals in practical work. When asked "*Do you have knowledge about the local society, economy, history, culture, and other aspects?*", the respondents all expressed sensitivity to the above key cultural information. For instance, in terms of law, the respondent believed that "in-depth research on local policies and regulations will benefit enterprises, but there is still a big gap." (A-2) In terms of technical standards, the respondent stated, "Most of the

'Belt and Road' countries are greatly affected by European and American standards. They believe more in European and American standards, which have significant impact on the territories of some engineering projects. Although our standards are stricter than some European and American standards." (B-3) It indicates that China's technical standards and specifications have not yet deeply been accepted by the locals.

(2) Comprehension competence

Comprehension competence is mainly manifested in the communicative subject's competence of comparing the culture of the target country with that of China, and drawing conclusions about similarities or differences with Chinese culture. This is manifested in the influence of the context, character roles, and cultural values of the communication on people's behavior, such as work concepts, hierarchical systems, and gender role differences. When asked "*Can you talk about the characteristics of the local people's lifestyle, work style, etc.?*", the respondent explained the social values and other factors behind the cultural phenomenon to deeply understand the cultural connotations of the target country. "People feel that their work is for life, and our life is for work. They think that work is a part of life. Chinese people tend to attach great importance to work, and their values vary greatly." (C-2). "They believe that work is only a part of life, and family is the most important. If they find that there is a conflict between work and family, they will definitely give up work to maintain their family." (E-2)

(3) Identification competence

Identification competence is mainly manifested in the communicative subject's competence of identifying and adapting to cultural differences between China and foreign countries. The countries along the "Belt and Road" have very different historical traditions, customs, languages and religious beliefs. The traditional cultivation of intercultural communicative competence, which only aims at British and American culture, can no longer meet the new requirements of the "Belt and Road" Initiative. Currently, the scale of engineering and technological talents with intercultural communicative competence in China is not enough, which directly affects the construction of "Belt and Road" initiative. On the one hand, the respondents expressed a strong emphasis on cultural differences, while on the other hand, they showed a lack of ability and concern towards identifying, especially adapting to, cultural differences.

5.2 Requirements for cultivating intercultural communicative competence of the "Belt and Road" engineering and technological talents

5.2.1 Establishing an inclusive intercultural communicative awareness

There are 65 countries and regions and 53 official languages along the "Belt and Road", which belong to nine language families and have great cultural difference. The

cultural customs and habits of many countries along the "Belt and Road" are completely different from those of China, and some even completely opposite. This requires the construction of talents to establish a global concept, possess intercultural awareness of smooth communication with people from multiple countries, establish inclusive intercultural communicative awareness when communicating with people from countries along the "Belt and Road", understand and respect the cultural customs of each other's people, not criticize each other's customs, not impose their own hobbies and habits on others, avoid violating cultural taboos of other countries, causing misunderstandings, and causing reputation damage to Chinese enterprises, As a result, it affects the interconnection and friendly cooperation of economic and trade between both sides.

5.2.2 Possessing self-learning ability to learn intercultural communication knowledge

With the proposal of the "Belt and Road" initiative, Chinese enterprises have more and more investment and business in countries along the line, and more engineering and technological talents are needed to cooperate with local governments and enterprises in countries along the line. This requires engineering and technology talents to understand the cultural characteristics and customs of the local country, understand how to effectively communicate with local government talent, enterprise management talent, and enterprise staff across cultures, and establish harmonious cooperative relationships.

5.2.3 Possessing global communicative competence

In the context of the new era of the "Belt and Road", there are many countries along the line, intercultural knowledge is all inclusive, and the intercultural environment is complex. The intercultural communicative competence of engineering and technological talents needs to be more global, so that they can effectively communicate with people from many countries. They should broaden their horizons, establish a global perspective, collect, understand, summarize, and absorb intercultural knowledge from countries along the "Belt and Road", and cultivate their ability to flexibly apply communication skills according to local cultural contexts in different countries.[17]

5.3 Pathways for cultivating intercultural communicative competence of the "Belt and Road" engineering and technological talents

In a foreign language environment, it is difficult for learners to develop their intercultural communicative competence naturally and can only be achieved through formal teaching. Even if learners have good foreign language skills, it is difficult to improve their intercultural communication skills without effective intercultural teaching. In view of this, the government, educational institutions and enterprises should attach importance to cultivating the intercultural communicative competence of engineering and technological talents along the "Belt and Road" to help them adapt

to the new requirements of the initiative.

5.3.1 Following the cognitive rules of cultural learners and cultivating their intercultural communicative competence

Governments, educational institutions and enterprises should attach importance to the intercultural research of the "Belt and Road", follow the cognitive rules of cultural learners, and focus on developing an efficient teaching model of intercultural communicative competence. The information processing theory within the cognitive framework provides a feasible theoretical basis for the development of intercultural communicative competence. Following the theory of information processing can effectively help college students deepen their intercultural communicative knowledge and improve their communicative competence in applying intercultural communicative knowledge. According to information processing theory, second language and cultural acquisition is a process of attention practice automation. Only the knowledge points that have been noticed by learners and understood and processed by their brains can be absorbed into long-term memory. When encountering relevant contexts, the noticed knowledge points can be extracted from long-term memory. Attention theory can explain the development of learners' intercultural communicative competence. In order to engage in effective intercultural communication, people must simultaneously pay attention to the intercultural communicative forms of discourse and the related social contextual characteristics.

5.3.2 Adopting a multimodal model to extend the scope of application of intercultural communicative competence

There are many countries along the "Belt and Road", and there are significant cultural differences in languages, historical traditions, social customs, religious beliefs, etc. In order to effectively communicate with the partners in the countries where the project is located and successfully complete the construction of the "Belt and Road", Chinese educational institutions and enterprises should develop a multimodal learning model, conduct national research by combining the three dimensions of classroom teaching, online learning and field practice, introduce the history, politics, economy, customs, social customs, communication skills, religious beliefs and other topics of countries along the "Belt and Road", and provide intercultural knowledge and communicative skills for engineering and technology talents in the country where the project is located. At the same time, the government should help engineering and technology talents establish inclusive intercultural awareness, enhance their sense of identity and pride towards the Chinese nation, and promote Chinese culture in a way that is popular among the citizens of the country where the project is located.

5.3.3 Expanding the connotation of intercultural communicative competence

Intercultural knowledge is an important component of intercultural communicative

competence and a fundamental prerequisite for achieving effective communication. Traditional intercultural knowledge learning mainly involves introducing common cultural phenomena such as traditional festivals, specialty foods, and table manners. This knowledge reflects surface cultural phenomena and cannot help construction talent understand the deep cultural spirit behind these surface cultural phenomena. In order to achieve mutual understanding among the people and gain the trust and support of cooperating units and individuals, engineering and technology talents need to understand the connotation of cultural knowledge in the country where the project is located.

6. Conclusion

China has increasingly frequent international exchanges with countries along the "Belt and Road" in social, economic, scientific, academic, and other aspects. Engineering and technological talents not only need excellent professional knowledge, but also need good intercultural communicative competence to adapt to the cultural customs of the target country, so as to adapt to the requirements of the "Belt and Road" initiative, establish harmonious cooperative relations with the governments, enterprises and people of countries along the "Belt and Road", and realize the common prosperity of economy and culture of China and countries along the "Belt and Road".

This research focuses on the intercultural communicative competence of engineering and technological talents, analyzes the current situation of the cultivation of engineering and technological talents' intercultural communicative competence, summarizes the current problems and reasons, and attempts to propose solutions. First, according to the three-dimension and nine-element framework of intercultural communicative competence, the qualitative research findings indicate that the intercultural communicative competence of engineering and technological talents is mainly manifested in explicit skills, such as linguistic competence, but influenced by a combination of individual intercultural cognition, and tolerant, respectful and open attitude. Secondly, there are some requirements for cultivating intercultural communicative competence, for instance, establishing an inclusive intercultural communicative awareness, possessing self-learning ability to learn intercultural communication knowledge, and possessing global communicative competence. Finally, several possible pathways for cultivating intercultural communicative competence are provided, such as following the cognitive rules of cultural learners and cultivating their intercultural communicative competence, adopting a multimodal model to extend the scope of application of intercultural communicative competence, and expanding the connotation of intercultural communicative competence.

This research is attempted to make novel contribution to the intercultural communicative competence of engineering and technological talents by offering a new framework, and provide empirical findings that fill existing gaps in literature. Due to the limited resource and platform available, this research did not incorporate

stakeholders, such as the CEO or other leaders of enterprises, faculty and students of higher learning institutions. In the future, several empirical researches will be continuously conducted by incorporating diversified evidence and methods. In addition, the research team will continue to pay attention to the intercultural communicative competence of engineering and technological talents who participate the "Belt and Road" construction, and moderately expand and integrate a global comparative perspective.

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