Chinese High School Students' Global Competence: Development and Assessment

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Abstract: With the advancement of globalization and digital technology, students' ability to live in an interconnected world has become increasingly important. Global competence has gradually become an important indicator for assessing students' progress. In the study of global competence, Western countries took the lead, followed by China. China has gradually transitioned from learning from the ideas of other countries to the construction of global competence education with Chinese characteristics, demonstrating a catch-up trend. So, based on the PISA Global Competence Framework, this paper aims to interpret what global competence is, how to develop students' global competence in the context of Chinese school practices, and how to assess students' global competence using the PISA 2018 Global Competence Framework. As a result, it can substantially improve global competency research and development.

1 Introduction

In recent years, due to the extensive economic and educational impact of OECD, global competence education has quickly become a global education policy. It is generally believed that it is important to cultivate students to thrive in a globally interconnected and cross-cultural world in the 21st century (Matthews, 2014; Zhang et al.,2015; OECD, 2016).

For young people, emerging economic, digital, cultural, demographic, and environmental influences are shaping their lives on earth and increasing their cross-cultural contacts every day (OECD, 2020). Therefore, people with global competence: understand other cultures, including languages; recognize and respect other cultural perspectives; and communicate with people from other cultures and religions (Mansilla & Jackson, 2011). Because only those

with global awareness, openness, and inclusiveness can participate in a more interconnected, diverse, and rapidly changing world, understand and benefit from cultural differences, adapt to this challenging society, and solve the common problems faced by mankind.

The cultivation of global competence has become an international trend. The western countries' research on global competitiveness looks back at China from both depth and breadth. As China's research on global competitiveness has just started, the connotation of global competitiveness is constantly enriched. Some literature mainly introduces the concept and dimension of global competitiveness. At the same time, influenced by foreign research, Chinese scholars began to study how to cultivate students' global competence from the perspective of reference and analysis, such as infiltrating global competence into the discipline system and integrating global competence elements into teacher training. (Zhang & Chang, 2019).

From the perspective of "how", school education is an important means to cultivate talents with global competence, so it has attracted much attention. Many Chinese scholars have studied and proposed that China can learn from the OECD global competence framework or the successful experience of other western countries or regions to improve the global competence level of Chinese high school students (Zhang & Zhu, 2020). At present, many primary and secondary schools and other educational institutions in China are carrying out global competence education (Xu, 2020). The importance of developing global competence education lies in the following aspects: on the one hand, Chinese educators really cultivate talents with global competence, which can enable China to assume a responsibly big country in this era of globalization; on the other hand, in a specific practice, various new concepts such as "core competence" and "financial literacy" have emerged in recent years, which require China to make comparisons and adjustments in education according to China's national

conditions, make up for the shortcomings of China's high school students' training programs, and carry forward and inherit the original advantages. So, what is global competence? How do cultivate and develop students' global competence in the practice of Chinese schools? How do assess students' global competence based on PISA 2018?

2 PISA Global Competence Framework

2.1 Introduction of PISA

With the gradual improvement of the degree of internationalization in the field of education policy, international organizations play an increasingly important role in knowledge dissemination, education quality monitoring and research in the field of global education policy. Among them, the Organization for Economic Co-operation and Development (OECD) has carried out quantitative education assessment such as PISA (Program for International Student Assessment), which has become the trend of the world's education system, and has become a common tool for comparing and evaluating the performance of students, schools or national education systems.

PISA is an international assessment program of student abilities coordinated by the Organization for OECD. It mainly evaluates 15-year-old students who are close to completing basic education to test whether they can master the knowledge and skills required to participate in society.

2.2 Introduction of PISA Global Competence Framework

In December 2017, the education and skills division of OECD and the Zero Project team of Harvard School of Education jointly released the PISA Global Competence Framework: preparing our youth for an inclusive and sustainable world, explaining the connotation of global competence and its evaluation basis (OECD, 2017). In the near future, OECD has made a further improvement on this basis and also made great progress.

In 2020, PISA adopted the following definition of global competence: global competence refers to the ability to study local, global and cross-cultural issues, understand and appreciate the views and world views of others, interact openly, appropriately and effectively with people from different cultures, and take action for collective well-being and sustainable development (OECD, 2020). This is not only an inevitable requirement for the harmonious coexistence of multicultural groups in the context of globalization, but also a new requirement for future education under the multicultural working environment in the labor market and the digital society. Only those with global competence can carry out open communication and effective cooperation with people from different cultural backgrounds, understand their relationship with external society and make responsible remarks in the online world (Teng & Du, 2018). In addition, cultivating global competence talents is an important way for every high school student to achieve sustainable development. It helps the new generation care about global affairs, participate in and solve social, political, economic, and environmental problems among western and eastern countries, open up their horizons, and have a clearer and more comprehensive understanding of the world.

The definition specifically outlines four inseparable target dimensions, namely, knowledge, skills, attitudes, and values, which need high school students to internalize and absorb in their daily life, and cultivate global cultural awareness and ability including these four aspects, so as to achieve cross-cultural understanding and communication successfully.

Dimension 1: Examine issues of local, global and cultural significance.

This dimension means that people with global competence can effectively combine world knowledge and critically rational thinking to practice when dealing with global problems, and they can accept different views, so as to expand their cognitive fields (OECD, 2018). This usually requires the ability to think at a high level. For example, how to select appropriate evidence to prove global development? Students can put forward their own problems, find materials, check information, analyze data, explain phenomena, and infer their own views and positions on local, global and cross-cultural issues. In this process, high school students will make a combination of the knowledge and thinking framework learned by the school. Moreover, students with global competence also need to have corresponding media literacy, be able to effectively obtain the latest information on the Internet, analyze and screen such information, create new media content and establish new media connections locally and globally (Buckingham, 2007; Kellner & Share, 2005). So global competence talents need these two aspects, both traditional and new media literacy.

Dimension 2: Understand and appreciate the perspectives and world views of others.

This dimension emphasizes the willingness and ability of globally competent people to consider global issues and the views and actions of others from multiple perspectives. As individuals gain knowledge about the history, values, communication styles, beliefs, and practices of other cultures, they gain the means to recognize that their own views and behaviors are influenced by multiple factors that they are not always fully aware of and that other people's worldviews are radically different from their own (Villarreal, 2009; OECD, 2018). One needs to maintain one's own cultural identity while being aware of those with different perspectives and world views. Acknowledging other positions or beliefs does not necessarily mean accepting that position or belief wholly, but they should respect each other and make more mature decisions in communicating and working with others.

Dimension 3: Engage in open, appropriate and

effective interactions across cultures.

This dimension describes what globally capable individuals can do when interacting with people from different cultures. They understand different cultural norms, interaction styles, and the level of formality in cross-cultural contexts, and they can naturally adjust their behavior and communication to suit others. The dimension embodies an appreciation for respectful dialogue, a desire to understand each other, and efforts to include marginalized groups. It emphasizes the ability of individuals to interact with others across differences in an open, appropriate and effective way. Open interaction means that all participants show sensitivity, curiosity, and a willingness to engage with other people and their perspectives. Appropriateness refers to interactions that respect cultural norms appropriately. Ineffective communication, all participants are able to make themselves understood by each other (Barrett et al., 2014; OECD, 2020).

Dimension 4: Take action for collective well-being and sustainable development.

This dimension focuses on young people's role as active and responsible members of society, and refers to individuals' readiness to respond to a given local, global or intercultural issue or situation. This dimension recognizes that young people have multiple realms of influence ranging from personal and local to digital and global. Competent people create opportunities to take informed, reflective action and have their voices heard. Taking action may imply standing up for a schoolmate whose human dignity is in jeopardy, initiating a global media campaign at school, or disseminating a personal viewpoint on the refugee crisis via social media. Globally competent people are engaged to improve living conditions in their own communities and also to build a more just, peaceful, inclusive, and environmentally sustainable world.

The focus here is on the role of young people as active and responsible members of society and refers

to the readiness of individuals to respond to specific local, global or cross-cultural issues or situations. Young people have a multifaceted impact, from an individual, local to digital and global. Competent people create opportunities to take comprehensive and reflective actions to make their voices heard. Taking action means standing up for those who need it. Globally, people with the ability are committed to improving the living conditions of their communities and building a more peaceful, inclusive, and environmentally and physiologically sustainable world (OECD, 2018).

These four aspects are interrelated and interdependent and need to be supported by specific knowledge, skills, attitudes, and values. Effective global competency education can help students have the opportunity to mobilize and apply their knowledge, attitudes, skills, and values when facing global issues or cross-cultural communication.

Knowledge about the world and other cultures. Individuals need to understand global issues such as poverty and environmental pollution, which will not only affect our local life but also affect global development (OECD, 2018). At the same time, individuals also need to understand the similarities and differences, and relationships between different cultures. When cultural backgrounds are similar, communication between two objects is usually smooth. However, when the cultural background is very different, due to the difference in behavior mode, thinking mode and even value belief, the two parties will often have misunderstandings or stereotypes, resulting in poor communication and even conflict (OECD, 2018). To acquire global competence requires students to understand the specific background, explain various phenomena, build various concepts about the links between countries, and finally form students' understanding of the world (Ding, 2016).

Skills to understand the world and to take action. Global competence is based on specific cognitive,

communication, and social-emotional skills. These skills not only refer to complex and structured ways of thinking but also refer to the ability to achieve a certain goal. Such as, the ability to question and answer based on information, effective communication based on mutual respect with people from different cultural backgrounds, and the ability of empathy and management of conflicts.

Attitudes of openness, respect for people from different cultural backgrounds and global-mindedness. Global competence is propelled by key dispositions or attitudes. Attitudes refer to the mindset that an individual adopts towards a person, a group, an institution, an issue, a behaviour, or a symbol. This mindset integrates beliefs, evaluations, feelings, and tendencies to behave in a particular way. Globally competent behavior requires an attitude of openness towards people from other different cultural backgrounds, living environments, religious beliefs, ways of thinking and family conditions, etc (Ding, 2016).

Valuing human dignity and diversity. Values transcend attitudes: they transcend specific objects or situations. They are more general beliefs about the ideal goals that the individual is striving for in life and reflect patterns of behavior or states of being that the individual considers preferable to all other options. In this way, values become the criteria that people consciously or unconsciously use when making judgments. They have a normative specification of what to do or think in different situations. Therefore, values inspire certain behaviors and attitudes. For example, for people whose independence is an important value, if their independence is threatened, they will feel desperate when they can't protect it. On the contrary, they will feel happy when they can enjoy it (Schwartz, 2012). They are constantly self-reflective, constantly updating their ideas based on different perspectives, creating space for a different but equally dignified way of life.

It is not difficult to find that global competence education is inextricably linked with international understanding education in our country. Most schools only stay at the "cognitive level" of "international understanding education", and even at the "cognitive level", they only stay at the surface of cultural phenomena such as language, festivals, and costumes, lacking deep thinking of different cultures and rational analysis of global issues. At the same time, our country's research on global competence is about 20 years later than that of the United States. The current literature research only focuses on the understanding of concepts and dimensions. At the same time, influenced by foreign research, Chinese scholars began to study ways to cultivate students' global competence from the perspective of reference and analysis, such as infiltrating global competence into the discipline system and integrating global competency elements into teacher training (Zhang and Chang, 2019). It is worth affirming that China has basically mastered the concept, training methods, and evaluation system of global competence, and has also paid attention to absorbing and learning from some useful experiences of other countries, which shows that China is trying to be in line with international standards (Zhang & Chang, 2019).

Therefore, on the basis of PISA Global Competence Framework, these questions about how to develop our students' global competence more deeply and comprehensively and how to assess students' global competence are launched.

3 The ways to develop students' global competence

3.1 Systematical plan of the global competency training system

As stated in PISA 2018, global competence is an organism that integrates knowledge, skills, attitudes and values. Its internal dimensions and elements are interrelated. Scattered and single activities are

difficult to cultivate students who are going to equip with global competence. Only by systematically planning the global competence training system, paying attention to the internal relationship of various dimensions and elements of global competence, as well as the development characteristics of students of different ages, can we promote the development of students' global competence. However, China has not yet formed a systematic global competence framework (Xu & Chen, 2020), and few schools have proposed international education or global competence training programs. The cultivation of high school students' global competence is more about the expansion and scattered knowledge, and the spontaneous behavior of principals (Xiong, 2017). Therefore, it is necessary for the state to comprehensively review and sort out China's international education policies from top to bottom, formulate a global competence indicator framework with Chinese characteristics, and carry out corresponding implementation guidelines. Local governments and schools should also formulate localization or school-based implementation plans according to the national unified indicator framework and implementation guidelines to ensure the systematization, orderliness, standardization and sustainability of global competence training.

The United States has given national support to students' global ability training. The Council on International Educational Exchange of the United States published a report entitled "Education for Global Competence" in 1988, which pointed out that American citizens must have a wide range of knowledge and be highly sensitive to multiple cultures in order to face complex changes in the world pattern (Teng, 2016). In 1998, the American Board of Education issued " Teaching for Global Competence: Americans Passport to the Future", which once again emphasized the cultivation of global competence (Hall & Valdiviezo, 2019). In November 2012, the U.S. Department of education for the first time

released a systematic and comprehensive international strategy, winning the world through international education and engagement, which emphasizes that individuals must be able to succeed in an increasingly connected world, and have the ability to effectively use existing knowledge and skills to fully participate in international affairs with global issues (Duncan, 2007). Japan and other developed countries have also issued a series of policy documents on international talent cultivation and global competency cultivation, forming a systematic and perfect policy and system guarantee.

3.2 Innovation platforms and channels to provide global and cross-cultural learning opportunities

At present, carrying out cross-cultural exchange projects is one of the most targeted measures to cultivate global competence. Many developed countries have begun to carry out diversified cross-cultural, cross-regional, and cross-language exchange projects(Zhang & Zhu, 2020). Effective global and cross-cultural learning activities should be those that have been proven to promote students' knowledge, skills, and attitudes, such as contact with foreigners, understanding different cultures, understanding the ideas of different people, discussing global events, etc. However, in practice, the degree of students' participation in activities in China is the same as that in OECD countries, that is, they participate in more activities related to teaching and learning, and fewer activities related to participation and experience (Zhang & Zhu, 2020). For example, the school can provide students with five themes "human rights, global environment, conflict and cooperation, international economy, and World Health". Students are required to outline their views on these themes and corresponding countermeasures in the design scheme six months later. In the early stage, students should study a series of issues such as politics, economy, population structure, history, social culture, etc. And

they can use all channels such as networks or paper materials to get their complex opinions (Zhang & Zhu, 2020). In addition, students have to carry out many cooperative discussions to jointly judge the reliability and utilization of the collected content. When everything is ready, the student representatives will take turns to "negotiate" with representatives of "other countries or regions" on bilateral or multilateral issues.

3.3 An open, harmonious, inclusive, and multilingual environment

First of all, the campus itself should be a place full of warmth and love. The principal of the school should be committed to creating such an environment to ensure a harmonious relationship between cadres and the masses, teachers and students, and friendly coexistence between them without discrimination and campus bullying. However, we can see on some w networks that schools in developed areas, which are mainly children of migrant workers, see the unfriendliness of principals to teachers and teachers to students, which should be paid attention to. In order to curb this vicious circle, it is necessary for the education authorities to give more attention and guidance to these schools. Secondly, the vast majority of schools in China only use English as the second language, and students have a small range of choices, which limits the development of students' language ability to a certain extent. Schools should give students more access to languages. Speaking two or more languages was related to students' outcomes. And students can have an awareness of intercultural communication, self-efficacy regarding global issues, perspective-taking, interest in learning about other cultures, respect for people from other cultures, attitudes, and adaptability toward immigrants.

3.4 Improvement of teachers' global competence and teaching ability

Teachers are one of the most important factors influencing students' learning outcomes. Teachers'

own global competence level, their understanding of global competence, and their ability to design, organize and evaluate global competence education and teaching activities may affect students' global competence development (Li et al., 2018). In OECD countries, few teachers participate in training on topics related to teaching in a multicultural or multilingual environment, and more than 40% of teachers have strong needs in these areas. This indicates that teachers' global competence is not well prepared for teaching and training. In the world, the current teachers do not have global competence. Teachers' knowledge about the world is in short supply, and their teaching skills about global competence are also in short supply (Zhang, 2018). So most teachers fail to do a good job in the assessment of students' global competence. The 2018 international teacher teaching survey (TALIS, 2018) also found that teachers in Shanghai also have the same problems (OECD, 2019). In this regard, it is necessary to take a series of measures to improve teachers' global competence and related teaching skills. Some scholars believe that in order to cultivate students with global competence, "teachers must teach for global competence, change their talent view, and put aside scores and examinations"; in addition, it also needs to "rapidly reserve global competence knowledge and literacy" and "rapidly improve the education and teaching skills for cultivating global competence talents" (Zhang, 2018).

High quality global competence teaching requires teachers to do the following: first, they can determine a hot topic of global or regional significance involving students. Second, they can focus on the effectiveness of global competence teaching. Third, they can design a way to show the results of global competence. Fourth, they always take the global competence as the evaluation core (Ding, 2016).

4 Assessment of students' global competence

Assessing all the complexities of global capabilities requires a multi-approach and multi-perspective approach. In the process of assessment, the attention should be paid: whether the purpose of evaluation is clear, the subject of evaluation is diversified, the way of evaluation is diversified, the design of evaluation is scientific, and the results of evaluation should be developmental (Zhu & Mo, 2022). Not only these teaching factors need attention, but also other influences related to the countries, schools and individuals direct our attentions. In the passage of Three Perspectives on Assessing Global Citizenship Education, there are two cross-national assessments and one school-level approach (Piacentini, 2017). It recognizes the need for evaluation to understand students' lives in a multicultural society, determine what plays a role in global education, and accelerate the achievement of the United Nations sustainable development goals. And some factors can be assessed like motivation and the user / contact indicator level (Fedorov, 2011). Another individual level is proposed for the dimensions of global competence: global attitude and perception; acquired, integrated, extended and refined global knowledge; global practical skills; and global habits of mind (Li, 2020). So, in this paper, the assessments are following.

4.1 Assessment focuses on global competence

The global competence assessment in PISA 2018 is composed of two parts: a cognitive assessment and a background questionnaire. The cognitive assessment is designed to elicit students' capacities to critically examine global issues; recognize outside influences on perspectives and world views; understand how to communicate with others in intercultural contexts, and identify and compare different courses of action to address global and intercultural issues.

The 2018 PISA global competency assessment consists of two parts: a cognitive assessment and a background questionnaire. Cognitive assessment aims to stimulate students' ability to critically examine global issues; recognizing the influence of the outside world on views and world views; learn how to communicate with others in a cross-cultural context, and identify and compare different action plans to solve global and cross-cultural problems. In the background questionnaire, students will be asked to report their familiarity with global issues; how their language and communication skills are developed; the extent to which they hold certain attitudes, such as respect for people from different cultural backgrounds; and what opportunities they have in school to develop global capabilities. Responses to school and teacher questionnaires will offer a comparative picture of how the education system integrates global, international and cross-cultural perspectives throughout the curriculum and classroom activities(OECD, 2018).

So, in this aspect, the assessment should focus on the global knowledge, skills, attitudes and values to fulfill their own development based the PISA 2018.

4.2 Assessment is ongoing and formative

Teaching evaluation focuses on the process of observation, monitoring, recording, and evaluation of daily teaching and learning, comprehensively understanding students' personality characteristics, learning effect, and development potential, and paying attention to students' learning process and growth experience. Therefore, the forms of teaching evaluation should be process-oriented. Guided by global competence, teachers should design the ongoing assessment for their students. The purpose of teaching this evaluation is that it is more suitable to make students have a lifelong studying. Therefore, teachers should strive to integrate evaluation activities into all links of classroom teaching activities, closely combine the usual tests, growth record bags, questionnaires, interviews, and other forms, try to use open-ended questions as much as possible, and encourage students to generate answers through thinking rather than selecting the correct answers from multiple options. And most importantly, formative assessments help

teachers understand student learning while they teach, and provide them with information to adjust their teaching strategies accordingly.

Take the growth portfolio as an example. The growth portfolio is an important form to show the students' dynamic learning process, which reflects the students' efforts, progress and learning achievements in their learning process. The growth portfolio usually collects students' representative learning achievements and reflection reports in the form of folders, which guides students to pay attention to both the content improvement and the form design of the portfolio, and teachers and students should make full use of the long-term tracking of the portfolio.

Schools also need to conduct formative and summative assessments of students' learning so that students can demonstrate their global competence. In particular, the assessment itself is an activity that promotes further and deeper learning(Mansilla & Jackson, 2012).

4.3 Assessment offers informative feedback

Information assessment emphasizes the basic purpose of the assessment, that is, to understand the students' learning so as to determine the best way to promote further learning. It uses the information obtained through assessment to help understand and guide the learning process. Information assessment focuses on how teachers and students use assessment information from multiple sources and aspects to provide information for teaching and learning and successfully promote global competence teaching (Ministry of Education, 2017).

4.4 Assessment can be conducted in multiple ways

Multiple assessment sources can work together to help teachers and schools understand student development ethical decisions and any other global developments. The explanation of the problem-solving model in the student files can provide evidence for the degree of moral decision-making when students solve these problems. Analyzing students' self reflection fragments may provide another kind of evidence. Therefore, different types of assessment can provide different aspects of student information, which is a more comprehensive method. In addition, different assessments can identify the strengths and weaknesses of knowledge, skills, attitudes and values (Ministry of Education, 2017).

5 Conclusion

People, cultures, and countries are more interdependent than ever before, and it is necessary to cultivate students' competence and willingness to solve problems on a global scale, and effectively participate in global issues and citizen environmental governance (Mansilla & Jackson, 2012). Achieving global competence through education requires major changes in schools including teachers and students. The ways to cultivate Global Competence and the significance of evaluation have the same part in schools.

6 Limitations and future research

This study mainly used literature review and second hand data to analyze the Chinese high school students' global competence, in the future, experimental research will be conducted to analyze students' global competence ability scales at home and abroad, and then construct the ability scale suitable for Chinese high school students, so as to explore the development of the combination of global competence and Chinese elements in education.

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