

# Development and implementation strategies of Geographic Key Competence (GKC)

Wu Hong<sup>1,II</sup>, Zhang Yong<sup>1,II,\*</sup>, Xiang Wen<sup>1,II</sup>

<sup>1</sup>School of Education, Hunan University of Science and Technology, Xiangtan, Hunan Province, China

<sup>II</sup>School of Resource, Environment and Safety Engineering, Hunan University of Science and Technology, Xiangtan, Hunan Province, China

## Abstract

*Geographic key competence emphasizes to cultivate this aspect of students. Starting from the development and connotation of GKC, this paper discusses how to implement it. Improving the teaching methods and key competences of geography teachers are the key to training students' GKC.*

## Keywords

Competence, Implementation Strategy Geography, Key

## I. Introduction

With competence the development of the world economy and politics in the 21st century, the key (TKC) has become an important international standard. Many countries are committed to the standards of key competence and leading the new direction of talent training. China formally proposed the concept of "Key Competence" in 2014 and began to revise the standards and plans of the curriculum. TKC must closely integrate with education [1]. Geography course is an important subject in middle school. Due to the important guiding role of GKC, the geography curriculum standard (2017 edition) has taken it as the core training target in middle school [2].

### 1. Development and connotation of TKC

A European Union research team first used "Key Competence" in their research report in March 2002. Subsequently, the European Union proposed a bill named "Learning Lifelong for Competences Key" [3]. Some countries (e.g. United States, Japan, Singapore) put forward the cultivation standards of TKC, and regard it as a necessary quality for modern people.

China has also been committed to the quality education development. Facing the challenges of the economy and society in the 21st century and the demand for high-quality talents and education training, the Ministry of Education issued the "Opinions on comprehensively deepening curriculum reform and implementing the basic task of fostering morality and cultivating the students". The "Opinion" first proposed to study and formulate the "TKC system". It requests to revise the plan and standards of the curriculum to combine with education closely. Its goal is to cultivate the talents needed in modern society [4]. Lin Chongde [5], Yu Wensen [6], Cui Yonghuo [7] and other scholars have conducted in-depth research on TKCs from different angles. On September 13, 2016, the "Core Competencies and Values for Chinese Students' Development" pointed out TKC was the character and the key ability for contemporary students to adapt to the development of themselves and society, and a comprehensive expression of students' knowledge, skills, emotions, attitudes, values, and other aspects. This report also set six TKC for middle school students [8]. Key competence becomes a new banner to guide the education development in China.

### 2. Development and connotation of GKC

Responding to the international development and the continuous reform of education, China put forward the "Geographic Key

Competence" based on the characteristics of geography. It conforms to the requirements of geography specialty, adapts to middle school students' geographical thinking and fits geography teaching.

Wang Xiangdong et al. generalized the geographic competences as follows: geographic competence is a steady psychological character, which the learner can gain through geography study, including the geographical science literacy, geographical humanities literacy and geographical technology literacy [9]. Chen Cheng et al. believe geographic competence is an organic composition and comprehensive reflection of one's geography knowledge, skills, abilities, consciousness, and emotions through training and practice. Geographic competence internalizes as implicit quality and explicit as concrete behavior [10].

The above scholars have made a systematic study of geographic competence, but this is only the basic definition of geographic competence. Geographic key competence is the most important key component of geographic competences. Tang Guorong believes GKC is composed of map skills, spatial perspective, comprehensive thinking and human-land concept [11]. Li Jiaqing pointed out GKC was composed of six closely related elements, namely, map skills based on spatial perspective, geographic information technology skills, international understanding, global awareness, human-land concept and sustainable development concept [12]. In the 2017 edition of general high school geography curriculum standards, the geographic key competence, which is composed of the concept of the coordinate between people and the nature, comprehensive thinking, regional cognition and geographical practice ability based on the integration of three-dimensional goals, will be a new goal to guide the development of middle school geography education [2]. Wang Min et al. made a specific standard division and case analysis for the four geographic key competence [13-16]. Overall, geographic key competence is to train students to establish geographical thinking, to understand the relationship between human and land and to analyze and solve problems by using the comprehensiveness and differences of geography. Its aim is to cultivate the students' geographical ability and literacy, and ultimately to achieve the fundamental goal of fostering morality and cultivating the students.

### II. Implementation strategy of GKC

GKC is the new goal of geography curriculum reform, but how to cultivate that of students, construct geography curriculum dominated by it, and innovate learning methods, and establish a

scientific curriculum evaluation are the key issues. Among them, how to build a key competence oriented geography curriculum is fundamental, how to implement courses is an important link to ensure the curriculum standards integrated with TKC, and how to promote teachers' comprehension is the key [17]. Therefore, geography teachers must change their teaching mode and enhance their GKC.

**1. Change geography teaching methods, explore new teaching models**

**(i). Constructing a student-centered teaching mode**

Junior high school geography is mostly knowledge of memory. In the traditional teaching, geography teachers often adopt the teaching mode of “force fed duck”, which restricts the development of students’ thinking and can’t meet the new teaching reform. However, establishing a student-centered teaching model can’t only give full play to students’ subjectivity, make students actively study and think, and establish geographical thinking, but also help

to enhance students’ interest in geography. Therefore, changing the teaching mode can help students form GKC.

In geography courses, we can increase the geography experiment to deepen the students’ understanding of Geography through the teacher’s explanation and students’ participation in the experiment. This can enhance the ability of geography practice, observation and comprehensive thinking. For example, for the chapter of “The Change and Distribution of Temperature”, teachers can let students design simple experiments to measure temperature changes during the day by using fine sand, water, and thermometers (Fig. 1). The students can get the first-hand information by measuring the temperature of fine sand and water on a sunny day. Then, through analysis of the results, students can sum up the law of temperature change to deepen their comprehension of the knowledge of temperature changes in a day. After mastering the experimental principle, students can consolidate the knowledge through after-class exercises. This approach can improve students’ abilities of geographical practice, observation, and comprehensive thinking.

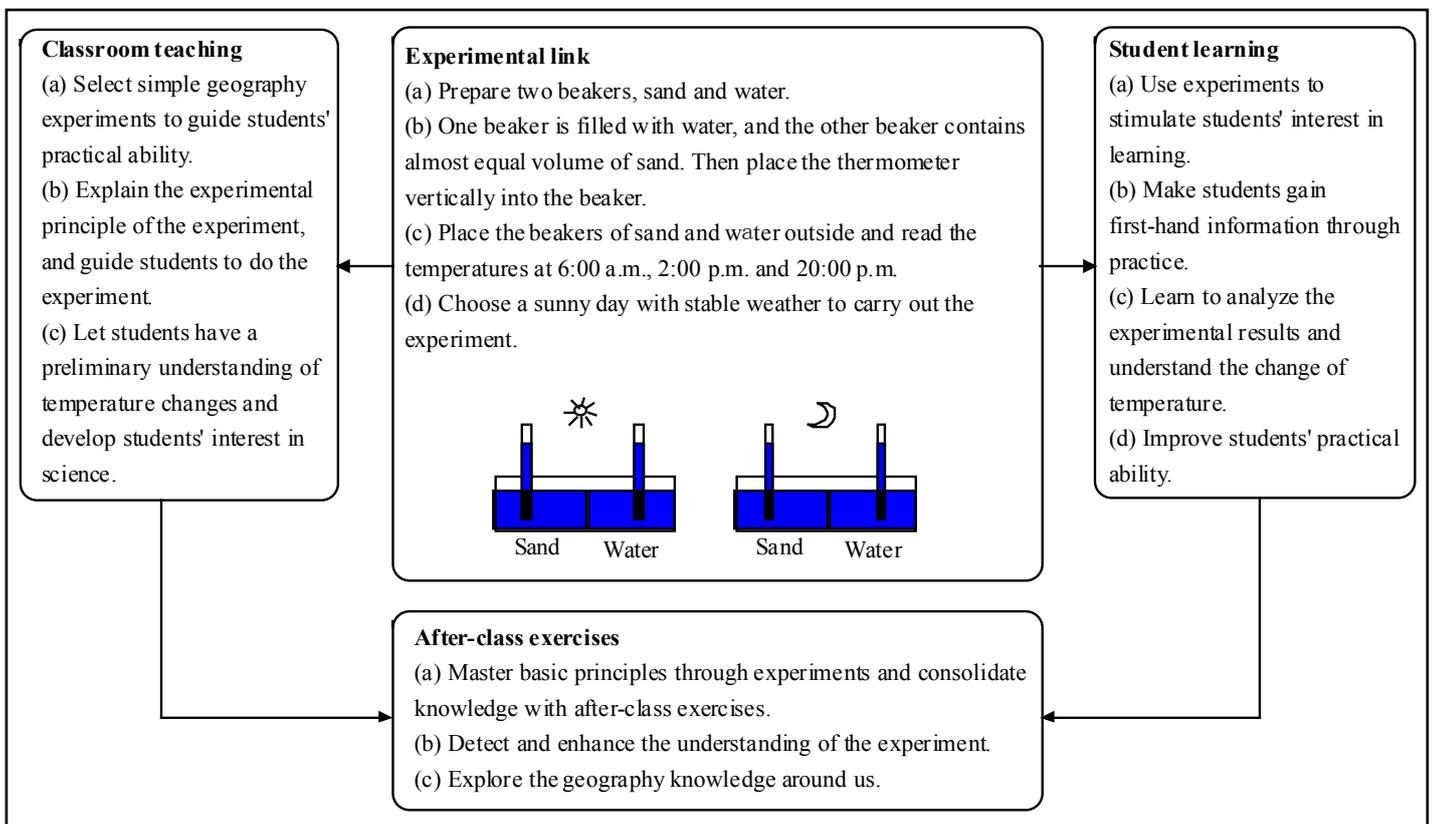


Fig. 2: Experiment of temperature change in a day

**(ii). Applying multimedia technology to geography teaching skillfully**

Multimedia technology is widely used in teaching. Multimedia can’t only broaden students’ vision, but also change geographic matter from abstract to concrete, which makes geography teaching more intuitive and easier to understand.

For example, when explaining the landform types, teachers can show different regions and landforms through Google Earth. In this way, students can understand the characteristics of different landform types intuitively, and deepen their comprehension on regional landforms. As a result, it cultivated students' regional cognitive ability. When teachers explain the “Time Difference”, they can use “MeteoEarth” software to observe an area is at

night or day to deepen students’ comprehension on the “Time difference”. Students can also use “MeteoEarth” to know the actual situation of global temperature, precipitation, and wind movement (Fig. 2).

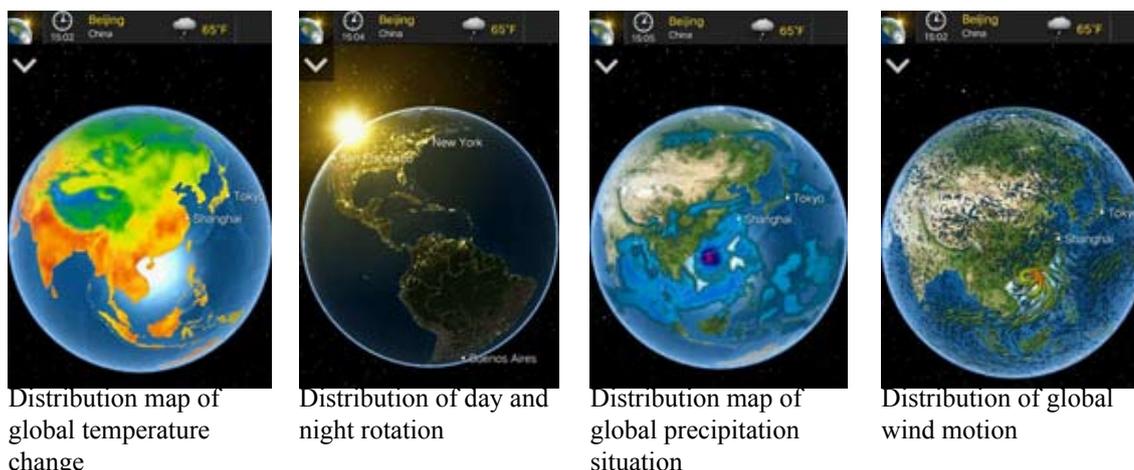


Fig. 2: MeteoEarth's applications in geography teaching

### (iii). Introducing “Local Geography” to form regional cognition

Geography teaching can teach the geographical knowledge of life through linking with the “Local Geography”. The infiltration of local geography knowledge is helpful for students to know more about the geographic matter around them and form a regional cognitive concept. Studying “Local Geography” is favored for exploring the geographical problems around them and enhancing students' geography practical ability. Because “Local Geography” can link the knowledge in geography textbooks with the geographical knowledge in life, students can transfer their geographical knowledge and form a comprehensive thinking. The introduction to “Local Geography” plays an important role in training students to love their hometown, pay attention to the development and changes of their hometown, and form the concept of human-land harmony. For example, when teaching “Transportation”, teachers can introduce the knowledge of ancient shipping traffic according to the characteristics of the local water system. In the chapter on “Railway Transportation”, teachers can take the local railway hub as an example to explain the impact of railway routes on regional economic development.

### 2. Improve geography teachers' GKC and promote the implementation of GKC

Teachers are the forerunners of education, and they should be responsible for training students' TKC. Therefore, it is not sufficient to only make clear GKC standards for students, but also pay more attention to the cultivation and development of geography teachers. Only the development of teachers' TKC is ahead of the development of students' TKC, the training objectives of students' TKC can be better implemented in the course teaching.

#### A. Deepening comprehension and Research on GKC

Students' GKC gains from teachers indirectly. Therefore, teachers must deepen their comprehension and research of GKC to better integrate with curriculum teaching. Geography teachers should make a detailed analysis and interpretation of the curriculum standards, and make clear the specific requirements of GKC. Then, teachers should analyze and interpret the textbooks based on the curriculum standard, and design the teaching plan, which conforms to the training goal of TKC and apply it to geography teaching. Teachers can also participate in the construction of TKC's curriculum evaluation system, and design a curriculum

evaluation system that conforms to the core quality objectives.

#### B. Improving teachers' professional quality

At present, the quantity and quality of geography teachers are difficult to guarantee the fulfillment of practical teaching tasks, and the key lies in their professional accomplishment [18]. Only geography teachers have high professional quality, they can grasp GKC, and cultivate that of students. In geography teaching, geography teachers should consciously improve their professional knowledge, grasp the forefront of the times, understand global changes, constantly improve their basic knowledge, and build their own geographical knowledge system. Meanwhile, geography teachers need to constantly absorb the knowledge of other subjects as a supplementary teaching resource to improve their comprehension accomplishment.

#### C. Strengthening teachers' research literacy

Geography teaching research is the key to teachers' growth. Teachers will encounter many kinds of teaching problems in analyzing geography textbooks, designing their teaching plans and carrying out teaching activities. Teachers can raise their teaching problems to educational theory to improve their teaching and research ability. GKC, as the beacon of new curriculum standard, is helpful to enhance teachers' research ability, deepen the comprehension of the new curriculum standards, and improve teaching concepts and teaching methods.

GKC is the key concept of geography education and put forward with the implementation of TKC in geography, and covers the basic knowledge, basic concepts and basic methods of geography. It can guide the development of geography teaching. Under the guidance, geography teachers should explore new methods and models, and pay attention to this literacy development of themselves. Only in this way, this accomplishment can be reached in students' training.

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