

# Optimizing College Foreign Language Teachers' Knowledge Structure from Multiple Intelligence Theory

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**Abstract**—The knowledge structure of college foreign language (CFL) teachers is crucial for their teaching & research and professional development. In this paper, the Multiple Intelligence Theory (MI Theory) by Gardner is brought into the category of Foreign Language (FL) teachers' knowledge structure; Accordingly, characteristics of FL teachers' MI knowledge structure are revealed; from the perspective of objectivity and subjectivity of knowledge existence, FL teachers' knowledge structure can be divided into two parts: the interior one and the exterior one; and at length, based on MI theory, suggestions on how to optimize FL teachers' knowledge structure are proposed from two aspects: interior knowledge construction and exterior knowledge construction.

**Index Terms**—college foreign language teachers, knowledge structure, optimization, multiple intelligences

## I. INTRODUCTION

Since the 1980s, researches on teachers' professionalization have increasingly become the focus of global educators and show the trend for the reform and development of world-wide teachers' education [1]. The research perspective of teachers' professional development (TPD) has shifted with epistemology from behaviourism to social constructivism theory; meanwhile, the knowledge structure of foreign languages is interpreted as from the mono one to the multiple one [2]. It has been increasingly recognized that the knowledge structure is the major influential factor for TPD. College foreign language (CFL) teachers are the senior disseminators of alien cultures. The amount, types, level, combination and arrangement of their knowledge influence their TPD and nurture of proficient foreign language students.

American psychologist Howard Gardner put forward multiple intelligence (MI) theory in 1983[3], thereafter it immediately caused tremendous echoes in pedagogical circles. In this theory, eight intelligent elements are recognized: linguistic intelligence, logic-mathematic intelligence, spatial-visual intelligence, musical intelligence, bodily kinaesthetic intelligence, interpersonal intelligence, intrapersonal intelligence and existential intelligent [4]. MI theory challenges the traditional concept of intelligence. Traditionally, people emphasize the prior two types of intelligence. However, it is not the case in MI theory. It maintains that intelligence is multiple, and types of

intelligence, relatively independent of each other, exist in an integrated way [5]. Accordingly, CFL teachers are supposed to nature their multiple and three-dimensional knowledge structure. Admittedly, linguistic knowledge is predominant in the structure. They ought to pay much attention to the development of other types of intelligence knowledge. This paper is to discuss the connotation of CFL teachers' MI knowledge structure, classification of it, and ways to optimize their knowledge structure from the MI theory.

## II. IMPORTANCE OF FL TEACHERS' KNOWLEDGE

The importance of FL teachers' knowledge can be reflected from a famous formula. UNESCO once proposed "five factors" and "one formula" on FL teaching quality, which quantify the value range of teaching quality under idealized circumstances [6]. The five factors comprise national policy on FL teaching, literacy and origin of students, learning materials' quality, teaching environments, and teachers' literacy. The formula is written as: Teaching Quality=[Students (1 point) + Learning Materials (2 points) + Environment (4 points) and Teaching Methods (3)]× Teachers. It is observed that however the prior four variables vary their sum value is definite (10). However, the value of "Teachers" is not limited. With other factors being equal, when the value of variable "Teachers" approaches infinity, that of variable "Teaching Quality" will also approach infinity; when value of "Teachers" infinitesimal, that of variable "Teaching Quality" infinitesimal. In other words, they are in direct ratio. FL teachers' literacy is crucial for the improvement of FL teaching quality. Some scholars hold that FL teachers' knowledge is equal or similar to their competence or literacy [7]. Accordingly, the formula above can be modified as: Teaching Quality=[Students (1 point) + Learning Materials (2 points) + Environment (4 points) and Teaching Methods (3)]× Teachers(Knowledge and other competences). It can find that with values of other variables being equal or fixed, the value of FL teachers' knowledge determines that of Teaching Quality.

## III. COMPONENTS OF MI THEORY

In MI theory, linguistic intelligence is on the use of spoken or written language. Those who are with high linguistic intelligence have a good command of words and languages and are good at reading, writing, retelling, and memorizing [3]. Logic-mathematic intelligence has much to do with logic, abstraction, reasoning, calculation, and scientific and critical thinking. Those who are with high logic-mathematic intelligence are good at such logical

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activities as mathematics, programming, and chess [3]. Spatial-visual intelligence is on spatial judgment and capability of visualizing what one sees. Careers which need much of such intelligence mainly comprise artists, designers and architects [3]. Musical intelligence deals with audio, rhythmical, tonal, and musical sensitivity or appreciation. Usually, those who have high musical intelligence are musicians, composers, music producers, and so on. Bodily kinaesthetic intelligence focuses on control of bodily motions/muscular movements and the capacity to handle objects skilfully. Those who have bodily kinaesthetic intelligence are good at such physical activities as sports, dancing, acting/performing, and building/making things [3]. Interpersonal intelligence Interpersonal intelligence refers to the ability to understand and interact with others. Those who are with high interpersonal intelligence are usually characterized by sensitivity to others' moods, feelings, temperaments and motivations, as well as team-spirit [3]. Intrapersonal intelligence is on capacities of introspection/self-reflection. Those who are with high intrapersonal intelligence have a comprehensive understanding of themselves, their strengths/ weaknesses, their uniqueness, and the ability to foretell their responses [3]. Existential intelligent is the ability to contemplate phenomena or questions beyond sensory data, such as the infinite and infinitesimal [3]. Occupations calls for mush of this intelligence mainly comprise shamans, priests, mathematicians, physcists, scientists, cosmologists and philosophers.

#### IV. THE MULTIPLE INTELLIGENCE KNOWLEDGE STRUCTURE OF CFL TEACHERS AND ITS CLASSIFICATION

When the eight types of intelligence above are introduced into the category of knowledge, they are to be eight types of intelligence knowledge (IK). According to objectivity and subjectivity of knowledge existence, those types of IK can be regrouped as two parts: the external one and the internal one. The former refers to the knowledge of about self, that is, the intrapersonal IK; and the later refers to the knowledge about the external world (creatures and other things) existing in objectivity, including the rest seven types of IK (linguistic, logic-mathematical, spatial, kinaesthetic, interpersonal, intrapersonal, existential). Linguist Breen has observed that in language teaching, systemic knowledge of language is the highest frequent one [8]. Similarly, Gatbonton has proven that for FL teachers, language management knowledge is one of the frequently used types of knowledge [9]. By the same token, in the multiple intelligence knowledge (MIK) system of CFL teachers, linguistic knowledge is core of it. Their MIK system can be described by the following chart. Besides, in colleges or universities, the major task of CFL teachers is teaching and doing relevant researches to further their professional development. Hence, the knowledge of CFL teachers must be teaching and research oriented.

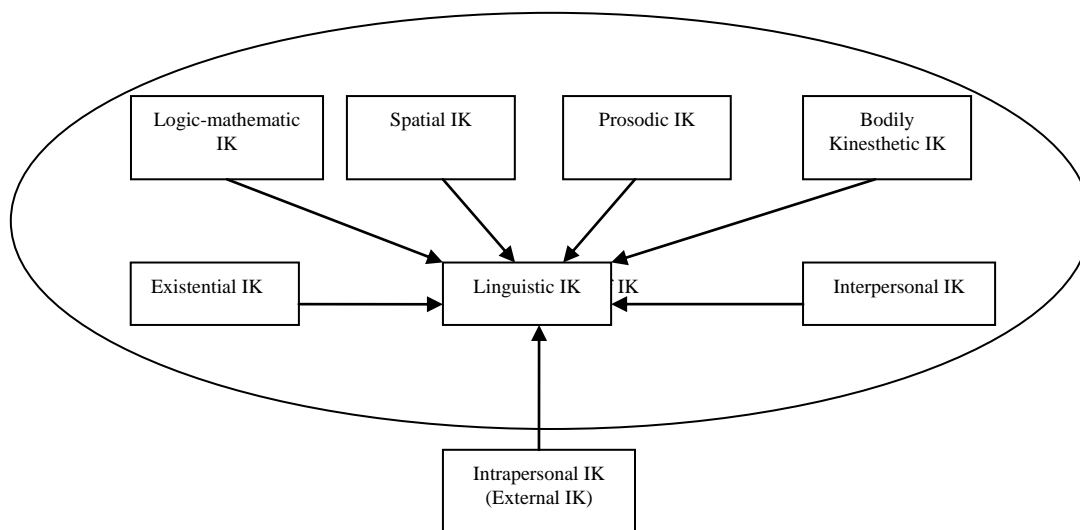


Fig. 1. The Multiple Intelligence Knowledge (MIK) Structure of CFL Teachers

#### V. WAYS OF NURTURING CFL TEACHERS' MULTIPLE INTELLIGENCE KNOWLEDGE STRUCTURE

##### A. Internal IK Construction

The internal IC of CFL teachers can be fortified by ways consistent with Intrapersonal intelligence theory. They have to have a good command of knowledge organization, management and coordination and development methods. Good knowledge management method can help them to check knowledge's strengths and weaknesses, find the gap between theirs and others', realize their uniqueness, and above all know what to do next. On how to strengthen

knowledge management, some scholars put forward the knowledge map management [10] and knowledge management building platform based on Blog-Wiki [11]. Through these ways, CFL teachers can supervise and optimize their knowledge dynamically, update and develop current knowledge, make up for the deficiencies, and eventually coordinate the relation among knowledge modules.

##### B. External IK Construction

First, in light of college students' FL proficiency and textbooks' contents, CFL teachers' basic linguistic literacy is qualified for FL teaching generally. But what matters is

how to exert their linguistic competence in perfect form in classroom and how to simplify linguistic difficulties or uncertainties. Accordingly, they should bear language “register” awareness, use authentic foreign language and lucid words to get themselves across. In addition, CFL teachers should not be satisfied with the current knowledge mastered for teaching and stop learning extensive aspects of foreign languages, for any language is profound.

Second, CFL teachers have to learn much logic-mathematic knowledge and approach language from logic-mathematic perspective. For instance, when explaining some linguistic theories, they can logical symbols to reveal structures and relations within language, quantify linguistic phenomena, and make full use of mathematical models to illustrate mechanisms of language use. Some scholars have study the linguistic Immediate Constituent Analysis based on characteristics of Binary Tree Data Structure [12].

Third, CFL teachers should have their spatial thinking pattern further fostered. In self-learning and teaching, they can try to employ “multi-modal” language (anything that can express meaning, such as sounds, pictures, super-texts, words etc) to interpret and communicate meaning and change pure text-based interpretation pattern. In listening-speaking training classes, CFL teachers can use such information technology as multimedia to transmit 3D information to students. When learning polysemy, they can manage to draw the tree diagram of semantic evolution, vertical and horizontal, of polysemous words in order to find the semantic trend of development.

Fourth, to master a certain amount of prosodic knowledge is crucial for CFL teachers. The auxiliary function of music ought to be given the full play in teaching and research. Among brain waves, one is called  $\alpha$  wave (inspiration wave). It can keep the brain in the best state. Researchers have now found that some baroque music is ideal type to improve learning efficiency, partly for the rhythm of baroque music per minute (60 ~ 70) is consistent with that of  $\alpha$  brainwave. Accordingly, teachers can play some light music to trigger students'  $\alpha$  brainwave so that the learning state of students can reach the best. CFL teachers still need to understand the "therapy" function of music and give different musical types to different people in need. For example, to the easily excited one, leisurely or Erhu music is the ideal type [13].

Fifth, to understand how to control their external behaviour and mood is also very important. In class, CFL teachers should manage to keep mood and like a speaker use body language including full expressions in their eyes to attract students' attention. When interpreting British and American novels, they can interact with students by role playing to have deep understanding of characters' actions and verbal behaviours.

Sixth, CFL teachers should pay much attention to flexible ways of their cooperation with students and colleagues. Taking in account students' actual receptibility of knowledge, they can mobilize students' classroom participation enthusiasm. Additionally, they need to strengthen cooperation with colleagues, set up research teams, conduct important theoretical and realistic problems in researches, and give full play to the overall strength of

teamwork.

At length, according to existential intelligence theory, CFL teachers ought to hone their meticulous though, especially, the abstract thinking. Scientific thinking method mainly includes: reasoning, induction, abstraction, visualization, creative thinking, rational imagination, taking one thing with another, discovering the nature of things, discarding the dross and selecting the essence, and truth seeking, etc. These thinking patterns can help CFL teachers see the essence and problems among daily language teaching and use, systematically expound academic views and research findings. Besides, creative thinking may help discover deficiencies in classical and authoritative theories and then put forward their own new ideas.

## VI. CONCLUSION

MI theory challenges traditional view on intelligence. Based on the theory, CFL teachers are supposed to construct the diversity of their own unique IK, optimize their knowledge structure including internal IK and external IK, and eventually promote their professional development.

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