ИНТРАЛИНГВОДИДАКТИЧЕСКАЯ РЕФОРМА ДИЗАЙНА УЧЕБНЫХ ПРОГРАММ STEM ПО АНГЛИЙСКОМУ ЯЗЫКУ: НА ПРИМЕРЕ ЧТЕНИЯ НАУЧНОЙ ЛИТЕРАТУРЫ

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Аннотация. В целях соответствия требованиям развития глобальной компетентности у обучающихся по программам STEM был разработан инновационный интралингводидактический методологический подход, прошедший апробацию в ходе экспериментального обучения по учебным программам STEM-образования на английском языке. В этом исследовательском проекте построение курса чтения на английском языке направлено на достижение цели развития глобальной компетентности. Целью данной статьи является разработка практической учебной базы чтения научной литературы на методологической базе интралингводидактики; оценка внутрилингводидактической учебной структуры курса английского языка по программам STEM-образования. Предметом исследования является изучение эффективности применения интралингводидактики в качестве методологической основы для разработки учебных программ. Новизна этого проекта доказана практикой преподавания по трем аспектам: взаимосвязь, децентрация и совместимость. Педагогическая практика доказывает, что глобальная компетентность – это совокупность знаний, умений, компетенций и личностных качеств, позволяющих STEM-талантам развивать иноязычную коммуникативную компетентность. А глобальная компетентность формируется будущей карьерой выпускника. Таким образом, учебный процесс STEM English приобретает новый смысл, то есть становится процессом автономного познания и усвоения англоязычных информационных материалов, имеющих профессиональную и социокультурную значимость.

Ключевые слова: глобальная конкурентоспособность, английский язык STEM, учебные реформы, английская информационная грамотность, интралингводидактика.

AN INTRALINGUODIDACTIC REFORM OF STEM ENGLISH CURRICULAR DESIGN: A CASE STUDY OF SCIENTIFIC LITERATURE READING

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Abstract. To match the teaching demands of STEM talents with global competence, an innovative intralinguodidactic methodological approach has been designed and experimented in curricular constructions of STEM English education. In this research project, the construction of English reading course is focused on achieving the training aim of global competence. The aim of this paper is to develop a practical curricular framework of Scientific Literature Reading on the methodological base of intralinguodidactics. The object of this paper is to evaluate the intralinguodidactic curricular framework of STEM English course. The subject is to examine the effectiveness of employing intralinguodidactics as a methodological basis for curricular design. The relevance of this project has been proven by the teaching practice in three aspects: interconnection, decentration, and compatibility. The teaching practice proves that global competence is a set of knowledge, skills, competencies and personal qualities allowing STEM talents to develop communicative competence of a foreign language. And global competence is shaped by future careers of a graduate. Hence, the educational process of STEM English acquires a new meaning, that is, it becomes a process of the autonomous cognition and digestion of English information literacy materials entertaining professional and sociocultural significance.

Keywords: global competence, STEM English, curricular reforms, English Information Literacy, intralinguodidactics.

Introduction

In the previous researches, the author has found that the challenging exterior circumstances require the higher education institutes in China to conduct student-centred curricular reforms in not only specialty courses but also general courses. The internationalisation and massification of higher education propose an urge for STEM talents with global competence. From the perspective of a foreign language teacher, the teaching objectives of STEM English, referring to professional English courses for specialties of Science, Technology, Engineering, and Maths, should be shifted to match the goals of fostering global competence.

Global competence for STEM talents could be illustrated with Paula Caligiuri and Victoria di Santos' definition which is developed from her survey among focus groups of HR managers and international business unit leaders. Such a definition offers the educators a practical viewpoint to comprehend the needs of graduates' future employers. Traits of global competence are divided into three categories, they are, knowledge, ability, and personality [1]. The needs of fostering the three categories of global competence mentioned above are embodied in the three levels of teaching objectives of the professional English course of *Scientific Literature Reading* (SLR) in this research, which are the objectives of English language points (knowledge), of cross-cultural communicative competence (ability), and of scientific spirits (emotional values of personality).

SLR is one of the core courses of English Information Literacy Curriculum (EILC) developed by the author and the team, officially recognised as Top-Ranked Undergraduate Course of Liaoning Province by Liaoning Provincial Department of Education in 2020. Related experimental practice has been accomplished during 2018 to 2022 in University of Science and Technology Liaoning (USTL) in China. This paper is based on the data of blended learning practice of SLR in the mentioned period.

In her latest book of *Build Your Culture Agility: The Nine Competencies of Successful Global Professionals*, Paula Caligiuri develops the theory of global competence into a personal development achieved through enhancement of intercultural effectiveness [2]. The natural interconnection between language and culture triggers an innovative intralinguodidactic methodological approach of this paper, which has been designed and experimented in curricular constructions of STEM English course of SLR.

The aim of this paper is to develop a blended teaching framework of *SLR* on the methodological base of intralinguodidactics. The object of this paper is to evaluate the intralinguodidactic curricular framework of STEM English. The subject is to examine the effectiveness of employing intralinguodidactics as a methodological basis for curricular design.

The novelties of this paper has been proven by the teaching practice in three aspects:

- Interconnection. The teaching objective of SLR evolves from the common teaching aim of cultivating industrial experts with global competence. Each individual course of EILC embodies the same emotional learning objectives, that is, to cultivate industrial experts with global competencies, entertaining cultural confidence, scientific research integrity, and concerns about human welfare.
- Decentration. The instructors are removed from the centre of course delivery and granted the role of course managers. SLR is designed according to the study needs of learners and conducted with multi-media channels.

- Compatibility. EILC involves courses and practice cultivating students' capacity to code, to communicate, and to decode information with English, concerning academic reading and writing, cross-cultural communication, technical exchanges. The blended teaching mode is compatible with training purpose of each course.

The paper starts with the definition of global competence and the initiation of EILC construction and SLR course. Detailed theoretical researches and practical measures are illustrated according to the time sequence of curricular reforms. Following up, the framework of operation is presented, supported with the practical data.

In conclusion, global competence shaped by future careers. The educational process acquires a new meaning, it becomes a process of the autonomous reading of information literacy materials entertaining professional and sociocultural significance. Moreover, global competence is a set of knowledge, ability, and personal qualities that allow STEM talents to achieve communicative goals with a foreign language in academic and professional occasions.

Literature review

There are two major relevant theoretical bases of this research. Global Competence is the requirement of talent advancement when faced with challenging issues for sustainable development of China's higher education. In other words, to cultivate global competence of STEM talents is the aim of STEM English curriculum in higher education institutes (HEIs) in China. Furthermore, an aim is the long term goal of a curriculum, which is the fundamental basis of teaching objectives of a specific course. Hence, global competence is the theoretical starting point of the reforming curricular construction which acts as the aim of EILC substituting conventional STEM English curriculum.

The term of intralinguodidactics refers to a featured research field in the foreign language institute of RUDN University. Intra-, instead of Inter-, indicates the nature of a multi-disciplinary research dimension. Global competence derives from the discipline of Management, selection of intralingual reading materials concerning linguistics and semantics, while a success in blended teaching is related to Positive Psychology Perspectives. And this intralinguodidactic approach offers a methodological basis for this research, which means the guidance of the realisation of the goals.

Definition of global competence. The hypothesis of this paper is based on the consolidation of global competence which is realised when STEM graduates are employed and began building up one's individual professional career. Starting from this hypothesis, global competence, as the aim of talent advancement in STEM English, should be defined by the HR managers and leaders of international business organisations. Only with this method, the reforming construction of conventional professional English courses could be granted a solid logical link which connects professional requirements with students' study motivation, students' study motivation with cultivation aims, and cultivation aims with innovative curricular designs. In this case study, STEM English is converted into a series of language and culture courses which are defined as English Information Literacy Curriculum. And the aim of EILC is to cultivate the global competence of STEM graduates.

Paula Caligiuri and Victoria di Santos' definition of global competence is developed from their surveys in 5 focus groups of HR managers and international

business unit leaders. Such a definition offers researchers of HEIs a practical viewpoint to comprehend the needs of graduates' future employers, moreover, the students' study needs beyond professional English. Traits of global competence are divided into three categories of knowledge, ability, and personality [1]. Detailed traits are presented as the table below:

Table 1

The Eight Developmental Goals of Global Competence

Category	Proposed Developmental Goal
Knowledge	Increase an individual's knowledge of the company's worldwide business structure.
Knowledge	Increase an individual's knowledge of international business issues.
Knowledge	Increase an individual's network of professional contacts worldwide.
Ability	Increase an individual's ability to transact business in another country.
Ability	Increase an individual's ability to change the leadership style based on the situation.
Personality	Increase an individual's openness.
Personality	Increase an individual's flexibility.
Personality	Increase an individual's ethnocentrism.

In 2021, Caligiuri furthers her research of global competence from the perspective of the personal fulfillment of learners and new employees. She claims that the core quality of global competence is the intercultural agility. The basic cultural conception of an individual who plans to develop his or her global competence is the recognition of individual differences as differences in cultural norms [2]. This widens the concept of global competence to the field of sociocultural studies. Cultural difference should co-exist with harmony. Individuals are demanded to cooperatively cope with the diversity of cultures.

Caprice Lantz-Deaton and Irina Golubeva, in their published work in 2020, argue that intercultural competence which is a collection of values, knowledge, skills, and attitudes which are increasingly in need in the era of globalisation [3]. And the aim of education for the college and university students is linked to three intercultural topics. The first topic is the increasing the potential for peaceful and positive relationships between people from different cultures; the second topic is that of assisting learners of language and culture courses to understand the significance of gaining intercultural competence; and the third one is that learners would entertain the intercultural competence addressing cultural difference with equality, diversity,

and inclusion worldwide. These three topics endow global competence a deeper definition, which leads to the agility of encode, communicate, and decode information with a mutual respect between individuals or parties from different cultural background.

The Chinese counterparts of the western researchers focus on macro-context of the sustainable development of the internationalisation and massification of higher education system. In her book *Comprehensive Global Competence for World-Class Universities in China: Context, Concept, Model and Evaluation* (2020), Li Jian discusses global competence on the level of world-class elite universities. Li proposes a framework of the conceptualisation and evaluation of a comprehensive development in global competence at an institutional or a national level [4]. Li compares and analyses the relative dimensional competence models developed by Marzano. Taking China's uniqueness in legislation and operation in the higher education system, Li proposes a model of comprehensive global competence, as is shown in Figure 1.

Dimension1: Global Attitude and Perceptions
1. Perception Domain
2. Attitude Domain

Dimension 2: Acquired, Integrated, Extended and Refined Global Knowledge
1.Declarative global knowledge domain (Acquired Global Knowledge)
2.Procedural global knowledge domain (Integrated Global Knowledge)
3.Comparing/Classifying/Abstracting domains (Extended Global Knowledge)
4.Inductive reasoning/ deductive reasoning/ Constructing support/ Analyzing errors /Analyzing perspective domains (Refined Global knowledge)

Dimension 3: Global Practical Skills
1.Decision-making skills domain (unstructured / structured problem)
2.Problem solving skills domain 3. Invention skills domain
4.   Experimental in Inquiry Skills domain (Definitional / Historical/ Projective Investigation)
5.   Investigation skills domain 6. system analysis skills domain.

Dimension 4: Global Habits of Mind
1.Critical thinking habits and minds
2.Creative thinking habits

Figure. 1. Sub-Dimensions Related to Constructing Global Competence

Li's research results hold a profound referential value for leaders in HEIs of China. However, her work is limited to facilitate the internationalisation of elite universities in China, which are recognised by China's Ministry of Education as 985 or 211 universities. These elite universities accept substantial financial supports from the higher education-related national administrative departments. Therefore, to the majority of common universities, the framework of Comprehensive Global Competence is not applicable to their development in talents cultivation.

There are 341 scientific articles on WOS which have been published between 2018 to 2022 containing the key word of global competence. WOSviewer is employed to develop a bibliometric mapping for the analysis of the latest research results of the concept of global competence (Figure 2).
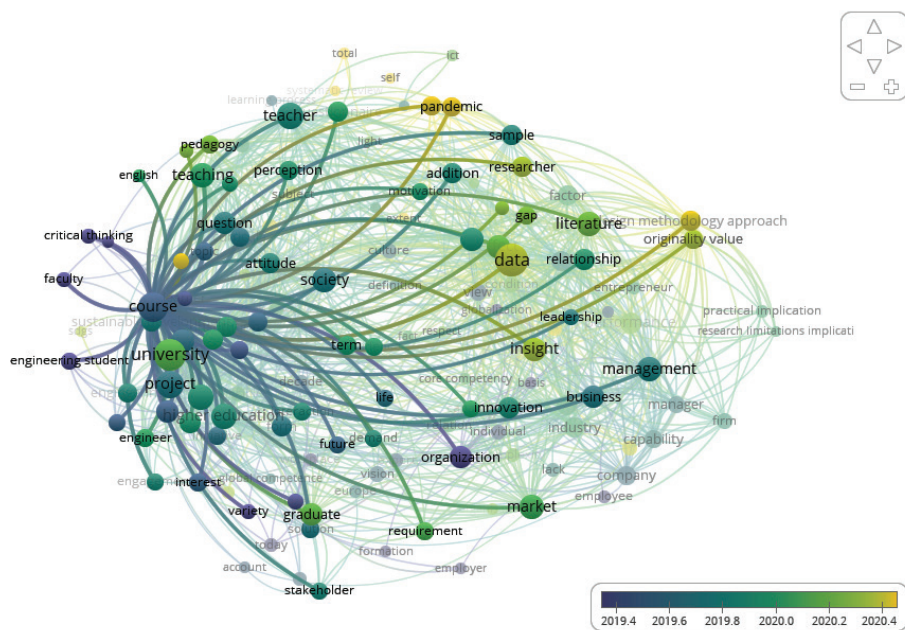
Figure 2. Bibliometric Mapping - Global Competence (Central Word: Course)

As it is shown in Figure 2, among the academic literature of global competence, curricular development is one of the central words connected with universities. And engineering students are the major target group of education for global competence. Latest researches emphasize the significance of cultivating global competence at different levels of education. Wu Xi claims that both learners and teachers need to enhance individual's global competence which enable themselves to be critically engaged in global issues with cross-cultural knowledge and cope with the sustainable changes in world education [5]. Anuli Ndubuisi *et al.* concentrates on the application of virtual team project to the teaching practice of intercultural communication and global perspectives which target Engineering undergraduates [6]. Virtual team work enhances the learners' intercultural sensitivities through the communication with peers on various occasions. Laura Starr *et al.* investigate the influence from a internationalized STEM learning community on the outcomes of cultivating global competence [7]. It is proven that such a internationalized program experimented among freshmen prepares participants for cross-cultural communication in their academic ladders.

Nonetheless, so far, as it is shown in Figure 3, the researches on global competence have failed to offer a practical framework to guide the curricular reforms and the organic allocations of teaching resources for common Engineering-oriented universities in China. Approaches which would direct the methodologies of curricular designs have been mentioned in the second quarter of 2020, while there is no solid inter-connection between the exploration of designing methodology and its application to educational practice. Therefore, there is an urge for a methodological approach being spotted to act as the guidance to realize the cultivation aims of EILC in this research project. Due to the multi-disciplinary nature of global competence, an intralinguodidactic approach is adopted to act as the steering of the realization of the teaching aim.

Figure 3. Bibliometric Mapping - Research limitations on Global Competence

Illustration of The Intralinguodidactic Approach. Didactics is the theory of learning, in other words, the study in the acquisition of knowledge. Didactics differentiates from pedagogy according to the target of the researches. Didactics is student-centered. In the field of foreign language didactics, approach refers to the theories about the nature of language and language learning that serves as the source of practice and principles in language studies [8]. Before the concept of intralinguodidactic approach, the Communicative Language Teaching (CLT) approach, especially the person-centered approach the dominant didactic methodologies for foreign language education. The person-centered approach is based on both the inter-communication of scientific knowledge of foreign language teaching and the interaction between the active participants during the didactic procedure, with learners, teachers, and intimate social contacts (for example, parents) involved [8]. Competence approach is another significant linguodidactic methodological basis of foreign language teaching [9]. The competence approach in foreign language education is focused on gaining specific learning outcomes and acquiring language and cultural competences. Competence cultivation process is granted a new connotation, which is the process of independent learning and active teaching, engaging information of professional and sociocultural importance [9].

In the paper, the conception of global competence derives from the science of Management. In the specific English course of *Scientific Literature Reading*, selection of intralingual reading materials is concerned with the science of Linguistics and Semantics [10]. Furthermore, an effective design of blended learning is related to Positive Psychology Perspectives [11]. The multi-disciplinary feature of foreign language education is linked to the conception of language, language proficiency, foreign language teaching and studying. Foreign language teaching itself has been evolved from closed to open didactic systems [12].

Educators and scholars of foreign language education examine their research targets with the terminologies of communicative competencies, proficiencies, cross-cultural experiences, and multiple literacies [13]. Theories of acquisition and effective approaches to foreign language teaching are deduced from practice. Curricular constructs are advocated which enable the learners to develop capacity of long and articulated sequences in a specific foreign language, as well as sequences in socio-cultural layer languages. Consequentially, foreign language studies are purely an individual choice supporting one's personal career or academic plan. Therefore, the related didactics cannot serve the realisation of such an individual studying motive if constricted to a single discipline.

To sum up, Global Competence serves as the training aim of EILC, with an Intralinguodidactic approach adopted as the methodological principle of following researches.

Materials and methods

The training aims of the three categories of global competence mentioned above are embodied in the three levels of teaching objectives of the EILC course of *Scientific Literature Reading* in this research, which are the objectives of English language points (knowledge), of cross-cultural communicative competence (ability), and of scientific spirits (emotional values of personality).

SLR is one of the core courses of EILC developed by the author and her team, officially recognised as Top-Ranked Undergraduate Course of Liaoning Province by Liaoning Provincial Department of Education in 2020. Related experimental practice has been accomplished during 2018 to 2022 in University of Science and Technology Liaoning (USTL) in China. This paper is based on the data of blended learning practice of SLR in the mentioned period.

SLR is a course developed from *English for Special Purpose*. In the common engineering specialised universities in China, generally, students of STEM specialties are required to take a course of General English (College English in China's universities) in the first two academic years. For the specialties in the first-class disciplines in a specific university, courses of professional English is available for the third year students. In the case of USTL, such professional English is taught via the course of *English for Special Purpose* (ESP). However, conventionally, the course of professional English is designed for one single specialty. For example, for the third year students of Architecture major, the institute of Architecture and Art implies *English for Architecture* as a selective course into the training programme. And this teaching task is assigned to an elite teacher of English in the Foreign Language Institute. The advantage of such administrative mechanism is that students could constantly improve individual foreign language skills, while the disadvantages surpass the advantage.

The problematic situation for students is obvious. Firstly, ESP holds only 16 study hours, with a merit of 1 credit. Students would regard it as an extra study burden which is separated from the learning procedure of General English, meaning unimportant. Secondly, students are motivated to finish the course of General English because it is relevant to the national examination of English twice a year, they are, CET 4 (College English Test Band 4) and CET 6 (College English Test Band 6). The certificate of CET 4 and CET 6 is one of the basic requirements for candidates

competing for a working position in the graduation season. On the contrary, there is no examination or practice opportunities for students to acquire the sense of achievement after taking the course of ESP. Thirdly, neither General English nor ESP matches the study needs of students.

In a survey conducted via SuperStar app on Oct.12, 2021, 500 engineering-majored freshmen are inquired on a satisfaction rating towards the English courses. The research team led by the author received 314 answers (sample size 314), which is shown in Figure 4 [14].

Figure 4. Answers to Satisfaction Survey on General English.

When being asked "Would the current course of College English be sufficient for the requirements of your work after graduation?", 69.7% of the respondents recognised the insufficiency of conventional courses of General English for one's future career. Moreover, when answering the other question, 14.3% of the respondents expressed strong dissatisfaction with conventional English course designs. Hence, a new curriculum of English meeting the training aim of talents with global competence should be developed.

Research results

In the previous sections, sociocultural qualities and information literacy are two major global competencies which could be cultivated through the systematic curriculum of selective courses of English Information Literacy. After 4 years of

reforms and reallocations of online and offline teaching resources, the EILC courses include *Overview on China and Chinese Culture* (2020 Provincial Top-Ranked Undergraduate Course), *Cross-cultural Communication between China and the World* (2022 Provincial Top-Ranked Undergraduate Course), *Scientific Literature Readings* (2020 Provincial Top-Ranked Undergraduate Course), *Culture and Translation* (2022 Provincial Top-Ranked Undergraduate Course), *Academic Writing*, *Aural Oral Visual English*, and *Literature Searching* (Table 2). All courses are mutually connected by three levelled teaching objectives, which are developed from the connotations of global competence. EILC courses are available for students to select in any semester. With this method, students could plan his or her individual English study procedure. Extra efforts could be made to achieve specific short-term goals of study. Meanwhile, EILC courses offer inter-cultural practical tasks inside and outside classrooms. For class size under 50, international students are invited to select the courses with their Chinese peers. Meanwhile, cross-cultural communicative tasks and activities are assigned to EILC students beyond the class hours.

Table 2

EILC Course List (Selective)

Course Name	Teaching Method	Intra-Connected Teaching Objectives		
		Knowledge Objective	Ability Objective	Emotion Objective
Overview on China and Chinese Culture	Blended (classroom, MOOC)	To grasp the vocabulary and expressions to introduce China, the country and her culture to other cultures in the world	To master the intercultural communication skills in an environment of social or academic exchanges	To reinforce students' sense of social responsibility, cultural confidence, and patriotism
Cross-cultural Communication between China and the World	Blended (classroom, MOOC)			
Scientific Literature Readings	Blended (classroom, SPOC)	To grasp academic reading skills in processing literature in English	To master the research ability of critical thinking	To reinforce engineers' scientific critical spirit
Culture and Translation	Blended (classroom, SPOC)	To grasp translation skills between Chinese and English	To master the crosscultural delivery of Engineering research result	To erect the attitude and method of independent autonomic learning
Academic Writing	Blended (classroom, SPOC)	To grasp writing skills in publishing one's research results in English	To master the research ability of critical writing	To reinforce engineers' scientific critical spirit
Aural, Oral, Visual English	Blended (classroom, SPOC)	To grasp the vocabulary and expressions to communicate in a multilingual environment	To master the multilingual communication skills in an academic environment	To cultivate students' ability of utilising information tools in a multi-lingual environment
Literature Searching	Offline (Computer labs in Library)	To get access to international academic searching engines	To master the research ability of critical reviewing	To strengthen the academic integrity consciousness

Individual EIL course are designed with distinct intralinguodidactic features. The curricular design of SLR achieves a major breakthrough. This breakthrough is that SLR is designed to facilitate the further studies of Academic English and Professional English with deliberate ambiguity in speciality. Table 3 presents the contents of SLR for undergraduates of STEM specialties. SLR is designed with intra-connected emotional objectives which are the crucial traits of a qualified scientific researcher or a responsible engineer.

Table 3

Contents of SLR

Units	Contents	Intra-Connected Emotional Objectives	
		Lead-in Cases	**Leaning Outcomes of Scientific Spirits**
Module 1 Readers of Mining	Mining; Mixed Design	The fictional plot of The King (South Korea TV Drama) of Republic of Korea being the world's largest rare earth resource country leads to students' attention to China's rich mineral resources. Moreover, a deep reflection on how to balance human development and resource protection is resulted.	Through the analysis of the specific examples of mining engineering projects, the students are guided to think about the sustainable development management of engineering projects. Establish subject correlation to arouse students' interest in the content of enterprise management reading course in module 8.
Module 2 Readers of Civil Engineering	Structure; Construction	The introduction to earth building (Tulou) of Fujian, a unique Chinese architecture, leads to the discussion of geographical environment shaping the characteristics of local civilisation.	How can people and the environment coexist harmoniously? 和 (he) is harmony. 和 is a diversity of culture in harmony.
Module 3 Readers of Architecture	Modern Development of Chinese Architecture; Chinese Gardens	The story of how China's architectural design industry gradually enter the international market is introduced.	To master the professional ability of strategic planning when faced with a blocked road to success.
Module 4 Readers of Metallurgy and Material Science	Chinese Bridges; Miraculous Materials	Through the collection of the miraculous construction stories of the Hong Kong-Zhuhai-Macao Bridge, Bird's Nest, and Water Cube, students recognise the great achievements of China's science and technology development	To establish ethnocentrism and cultural confidence of Chinese nation.
Module 5 Readers of Mechanical Engineering	Mechanical Engineering; Machine Design	Students are required to explain the pop terms of «Infrastructure demons» and «Artifacts of the Great Power «.	Students are led to experiencing the great achievements of China's science and technology and establish pride in industrial culture.
Module 6 Readers of Chemical Engineering	Principle; Operation Procedure	To introduce the research achievements, advanced deeds of Professor Hu Zhizhi in USTL. To illustrate the factual difficulties faced by Professor Hu and his team.	To consolidate students' scientific research spirit.

End of Table 3

Units	Contents	Intra-Connected Emotional Objectives	
		Lead-in Cases	Leaning Outcomes of Scientific Spirits
Module 7 Readers of Tele-communication	Modern Development of Electronics; Electronic Technology Fundamental	With the embarrassing situation of India's banning Chinese mobile phone apps, the loss of market of Indian apps, and the personal anecdote of Chinese American's «disabling wechat», students are led to reflection on individuals' definition of and influence on the third Industrial Revolution	To Strengthen the determination of independent scientific research. It must be clarified that plagiarism is not a «short cut», but a «desperate path».
Module 8 Readers of Business Administration	Starting a Business; Sales and Marketing	To introduce the "Square Association" of the United States and Japan and how the United States suppressed the Japanese electronics industry.	To analyse the fact that comprehensive national producing power is the solid truth in international trade.

Moreover, SLR is designed to be delivered with a blended teaching method. In every study hour, pre-tasks are distributed onto students' smart phone app, Super Star, where the SPOC of SLR is operated. During the class, the teaching procedure of BOPPPS is employed to ensure the effectiveness and efficiency of each study hour. In the section of B (Bridge-in), the teacher uses selected lead-in cases to bridge students' attention to the reading contents of this lesson. In the section of O (Objectives / Outcomes), students are clear about the expected study outcomes of the lesson. In the section of P1 (Pre-test), students' performance in doing the pre-tasks are examined with a quiz on Super Star. After a brief evaluation on the performance of students, the teacher leads students to experience P2 (Participatory Learning), where flipped classroom is a common-used didactic method. P3 (Post-test) offers the teacher an opportunity to gain feedback of students' study achievement of the day. Last but not Least, S (Summary) functions as the final evaluation of students' performance of this lesson. Suggestions should be offered to the poorly performed students. Also, the cross-cultural communication task (assignment) should be explained to the students. And to motivate students in finishing the task they choose, assessment standards should be publicised.

At the end of the semester, a survey of course evaluation is distributed to Super Star. 97% of the respondents (sample size: 342) evaluate the course as "SLR is difficult, but I like it."

Discussion and conclusions

The results above highlight the importance of methodological development in pedagogical research projects. Generally, terms of aim, goal, objective, approach, method, methodology are mixed in a mess. Such vagueness undermines the theoretical foundation of a certain research project, devastating the deducing of results.

In conclusion, global competence is the requirement of talent advancement to the internationalised curricular development in HEIs. To cultivate global competence of STEM talents, common HEIs in China needs to explore a multi-disciplinary method

to reform the general courses for undergraduates. The case study of this paper support HEIs with an innovative way to match the needs of global competence. With a methodological principle of Intralinguodidactics applied to the developing procedure of EILC, the strategies of realisation blended course designs are fully conducted. The EILC courses entertain the characteristics of interconnection. The teaching objective of SLR evolves from the common teaching aim of cultivating industrial, decentration, and compatibility.

Conventional courses of General English or professional English are suggested to be reconstructed to meet the demands of internationalised talents with global competence. Meanwhile, considering the limitation of financial supports to the common universities and colleges, it is recommended that both on-line and off-line learning resources should be reallocated according to the featured teaching objectives of individual course. There is no need to construct one virtual version of each EILC course. Virtual learning resources, for example, MOOCs or SPOCs might be shared by different courses. However, it should be noted that specific tests must be designed for individual course. Online resources could be organically shared when the teacher's role is shifted from a central designer to a study manager. This issue will be detailed examined in the following researches of the author.

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