CSCanada
Higher Education of Social Science
Vol. 10, No. 5, 2016, pp. 23-27
DOI:10.3968/8461

ISSN 1927-0232 [Print]
ISSN 1927-0240 [Online]
www.cscanada.net
www.cscanada.org

Occupational English Training to Chinese Civil Engineers for Over-Sea Project Under "the Belt, the Road Initiative"

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Received 15 February 2016; accepted 9 April 2016
Published online 26 May 2016

Abstract
An effective and efficient project-specific English training program is developed and implemented to improve the overall occupational English efficiency of Chinese civil engineers who are involved in oversea civil engineering projects in which English is the working language. A series of well-established customer-tailed civil engineering teaching curriculum, method and considerations are proposed based on in-depth investigation and research in the root-reason of poor English skill of Chinese civil engineers. This training will greatly improve the occupational English level so as to avoid disputes and claim induced by communication insufficiency or failure and even misunderstanding which further causes incorrect decision thus causing huge economic cost.

Key words: Occupational English; ESP; Project-specific English training; Oversea project; Communication efficiency; Cross-cultural communication

Guo, J. Y. (2016). Occupational English Training to Chinese Civil Engineers for Over-Sea Project Under "the Belt, the Road Initiative". *Higher Education of Social Science*, *10*(5), 23-27. Available from: URL: http://www.cscanada.net/index.php/hess/article/view/8461
DOI: http://dx.doi.org/10.3968/8461

INTRODUCTION
Chinese civil engineering companies armed with talented Chinese engineers and equipped with modern equipment and plant march across the border into foreign countries to build infrastructures in extensive oversea civil engineering projects and the regions in compliance with "the Belt and Road Initiative". As an international practice, the working language applied in the cross-border projects shall be English dominantly. Chinese engineer's English is a big concern of all parties involved and Chinese engineer's insufficient English skill, both oral and written, always impedes their free communication with foreign governors and officials as well as their foreign partners. So, it is urgently important to accurately evaluate the prevailing English efficiency of Chinese engineers, identify, pinpoint the shortcomings and finally provide an efficient and effective project-specific occupational English training to Chinese Engineers to improve the English communication competence of the Chinese Engineers who are supposed to play an important role in daily work and try best to avoid misunderstanding, claims from foreign partners and client due to insufficient communication.

1. OCCUPATIONAL ENGLISH OR GENERAL ENGLISH IS NEEDED BY CHINESE ENGINEER?
In order to create an effective and purposeful English training to the Chinese practice civil engineers, mere general English course is obviously impractical and helpless to the highly professionals who badly need occupational English rather than general English to talk about jobs, exchange technical information, negotiate contract terms at working place. Only greeting each other and smiling face to face with their client is not enough to fulfill their obligations under the works contract and they need to speak their occupational English fluently to make themselves understood by the foreign specialists with similar technical background.

1.1 Definition of Occupational English
What is occupational English anyway? Occupational English known as "workplace English" is concerned about the specific occupational affairs and is the working

language which is used by certain occupation practioners at working place and a special group of people in the same occupation. Just like such the terms as "curriculum, score, examination" are normally used by teachers, such technical terms as "loads, dead load, live load, structural design, pile foundation" are daily used by civil engineers in their technical ideas exchange. Occupational English is featured by being full of terms or jargons and a set of terms are well-established and recognized by the civil engineers all over the world, which enable multi-nationality engineers to perform technical exchange and cooperate in international projects. The occupational English falls into category of ESP (English for specific purpose) and for civil Engineers, it is referred to "the Civil Engineering English" which is the working language in international project in which more than one nationality is involved in aspects of project management, design, construction, contract concluding, consultancy and other services required by any civil engineering project. Thus the daily communication both in oral and written English is mandated and formal-styled written English document shall be submitted upon the requirement of the client. The international convention as FIDIC—Conditions of contract for works of civil engineering construction defines that English governs in case of any disputes arisen, for over 85% of civil engineering contract are written in English except for the projects in Africa and Northern Latin American countries where French, Portuguese and Spain are the dominant languages. Therefore, the party involved in the international projects should be competent in English and those parties with inadequate English level will be placed in an unfavorable position in business negotiation, discussion and argumentation, correspondence and contract interpretation. Any ambiguity and unclearness in expression or misunderstanding of information may lead to disputes, claim and the loser often suffers enormous economic loss. In this case English level means money.

1.2 The Existing English Level of Domestic Chinese Engineers

The Chinese Engineer generally is poor at engineering English for following reasons: Firstly, nearly all Chinese engineers go through and complete their college education in the mainland of China where civil engineering courses are taught only in Chinese with Chinese course books. All the technical concept and terms are presented in Chinese and the candidates do not know the counterpart in English. The teachers of engineering profession do not think it necessary to introduce English terms to the Chinese candidates for firstly it is not their job to teach English terms. Secondly, civil engineering is such a broad subject and is traditionally broken into several sub-disciplines including structural engineering, transportation engineering, geotechnical engineering, construction material science, surveying, construction engineering, water resources engineering, coastal engineering, environmental engineering and municipal engineering. No single teacher of engineering can cover all the technical terms and contents in English and one teacher may be only familiar with limited amount of English terms applied in his profession. Thirdly general English teaching represented by the College English course overwhelms the civil English teaching in Chinese colleges. The Chinese engineer candidates in their college period are taught "College English" uniformly with 6 periods per week by the college English teachers or instructors of English profession in their first and second academic years and in their third and fourth academic years the candidates starts learning civil engineering English known as "profession English" (2 periods per week) taught by the subject teachers of civil engineering profession who normally have oversea working or learning experiences and have some English knowledge. For the college undergraduate or even post graduate, college English is more important than the civil Engineering English and most the candidates spend more time and effort on general English study in an effort to pass the national English examination known as " College English Band Four or Six" in order to obtain the certificate which helps them a lot in seeking for a decent job and even means a lot to the candidates in the matter of being acceptable or unacceptable by their potential employers. So Chinese engineering candidate is exposed little to their occupational English which they really need in the international oversea project in which they might be involved in the near future. Fourthly, most Chinese engineer candidates at college assume that they only engage in domestic projects and had little chances or opportunities for international project and working face to face with foreigners in oversea projects is beyond their imagination and unthinkable. They also assume that even if one day they have to work for oversea project they have full-time English translator to depend on and speaking English is not their duty and obligation. When Chinese government launched the project of " the Belt and the Road Initiative" large number of Chinese engineers are suddenly exposed to oversea project in which English is compulsory they feel at loss and face a huge communication challenge to overcome in additional to cultural shock experienced, for occupational English skill is not improved overnight and it takes time. Now Chinese engineers have become more and more aware of the shortage of English skills, especially the occupational English applied at the working place and thus strongly demand for project-specific English training. But where can they find such a training faculty or training organization or qualified trainer with experiences of engineering and English training? The most Chinese teachers of English at college are ignorant of civil engineering knowledge and fundamental concepts while

the teachers of civil Engineering had little English teaching experience or method to guide them. A big gap exists between the two extreme groups and where can we find the teachers who are professional English teacher with sound civil engineering knowledge and jobsite experience and have insight of the real needs of the Chinese civil engineers at the same time?

1.3 The Identification of Chinese Engineer's Strength and Weakness in English Competence

According to my training practice and personal experience of working on jobsite with Chinese engineers and foreign engineers in joint venture projects, Chinese engineers demonstrate following strengths and weakness in their English competence: Higher English reading comprehension, competency of translation from English to Chinese; Chinese engineers can extract the information from English document by guessing based on their professional knowledge even if some new words are encountered and they are logical and good guessers. They can translate technical document from English into fluent Chinese for they are more familiar with Chinese way of expression than English way of expression. However, they appear to be poor at oral expression in English and English hearing ability, writing and translation from Chinese into English. When Chinese engineers and foreign engineers are sitting together discussing technical problems, Chinese engineers tend to keep silent and they are afraid of making mistakes or expressing their ideas for they have low confidence in their oral English. Their English pronunciation is odd with wrongly stressed syllables for they had little training of pronunciation and they are taught with so called " dumb / silent English" as they call it, because college English both band four and band six excluded spoken English so they do not have to practice their pronunciation and spoken English. Besides the college English teaching also known as "English for general purposes" is taught in a large sized class with as many as 60 students in one class and they have no chance to practice oral English. Chinese engineer miss the core technical term pool which is crucial to express technical affairs, lack of science English writing skill. Chinese engineers lack engineering-contented writing practice for the composition in college English band four or six examinations give a general English topic which has little to do with their jobs! They do not know how to write or translate technical design statement or commercial contract or even official correspondence in English. Lastly the Chinese engineers lack translating skills practice, especially engineering-based translation from Chinese to English which is badly required on site and they have problems with constructing English sentences, correct choice of words and formal and written style. What's worse, Chinese engineers also are lack of cross-cultural communication training.

2. DEVELOPMENT OF AN EFFICIENT AND EFFECTIVE PROJECT-SPECIFIC ENGLISH TRAINING PROGRAM

2.1 A Customer-Tailored Intensive Occupational English Training Course-Two-Staged Training Course

Aiming at above-mentioned challenges faced by the Chinese engineers, the development of a project-specific English training program is urgently called for to provide a solution to the embarrassment faced by the Chinese engineers involved in the specific projects prior to their signing-on post. Since civil engineering discipline is a broad discipline composed of multi-subdisciplines thus it is impossible to cover all the lines at the same time. The English training courses are classified into two stages: Stage 1 of basic engineering English training for the civil engineers of all subdisciplines namely the core terms and fundamental engineering English are conducted, which are compulsory and essential for any civil engineers majored in any subdisciplines of civil engineering such as structural engineer, geotechnical engineer, project manager and site staff at all levels. Yet the core pool of technical terms, typical sentence structures, essential readings are selected which are commonly used to all professionals in civil engineering line and this core vocabulary size ranging between 500-1,000 words are taught and practiced intensively by the Chinese engineers. With this core technical vocabulary and typical sentence patterns in mind, they can express themselves in majority situations on site. The focus is paid on the essential concept expression in English and fundamental technology such as "concrete cast procedure, reinforcement layout, loading cases description etc." which is required to be mastered by any civil engineer. The teaching contents cover geotechnical engineering, geohydrological engineering, mechanics, constructional materials, construction safety, fire fighting and prevention, ventilation and lighting, personal safety on site, project management and construction engineering.

2.2 Project-Specific Training

Stage 2 is referred to a higher advanced training which is project—specific training designed only for a particular type of engineering project such as bridge engineering, tunnel engineering, road engineering, coastal engineering, and hydroelectric power plant and so on so forth. Since different typed project has different characters involving in different construction technique and structural configuration, some terms are specially and only used in this project such as the term "floating-up" only for in immersed tunnel construction procedure and "tailrace tunnel" for hydroelectrical power plant project. In stage 2 advanced training, the candidates are divided into different groups by disciplines to enhance further their

occupational vocabulary, oral English and written English and the teaching contents are narrowed and more specific and typical sentence structures specific for the typed project are analyzed , studied and practiced and working situations are simulated for the candidates to practice oral English. Functional grammar is adopted as theory for engineering English discourse structural analysis and basic grammars typically used in engineering English such as passive voice will be studied and practiced emphatically by candidates. Typical sentence structures and sentence patterns are picked out to be identified and practiced by candidates who master some basic sentences structures which are usually used for project description, design solution, loading analysis, construction procedure and method statement and other functions.

2.3 Technical Terms Training

Technical terms particularly for certain projects are carefully selected for emphatic practice. It is known that engineers use technical terms extensively. Chinese engineers shall be familiar with those internationally recognized English term system and match them with their counterpart in Chinese. It is the conspicuous problem that Chinese engineers only know Chinese technical terms and miss those English terms. That is the very reason why Chinese are hindered in their oral and written expression of their ideas, some of which might be critical innovations and creations. Or they express their ideas in Chinese way which might not be standard or acceptable internationally. Technical terms shall be practiced both in English oral, written and translation practices.

In addition to technical terms training, skills and principles of word formation is also important to Chinese engineers. It is understood that engineering English is full of composite words and new words are created with new technical development and innovation, such as semi-rigid joint, self-compacting concrete, high-performance concrete and so on so forth. Frequently used affix and suffix particular to civil engineering context are taught collectively to the engineers to enable them to form new word by themselves as appropriate whenever they encounter new thing or substance to name.

2.4 Translation Skill Training

Written translation skill and strategies are taught in English training. It is common that Chinese candidates think in Chinese, and then translate their thinking into English instead of thinking directly in English. It is impractical to train Chinese adult engineer to think in English when they have been brought up, educated in mainland of China and seldom exposed to English speaking society. The only practical way to improve their oral English is to teach them how to mentally translate their ideas from Chinese into English and make this conversion as rapidly as possible. Thus translating skills and strategy are important for the Chinese engineer to master. Emphasis is laid on the Chinese to English translating practice which facilitates the Chinese engineers to voice their ideas.

2.5 Functional Grammar Based English Grammar Training

Engineering English grammar training is based on theory of systematic functional linguistics. Specific functions are clearly divided into and assigned to parts of speech. It is important for the Chinese engineers to identify the function of each part of speech and use them consciously and correctly to express themselves. It is known that passive voice is extensively used in engineering discourse in which object instead of people is the subject in the sentence and is highlighted. If the Chinese engineer masters some basic and typical sentence structure, they can express themselves clearly and grammatically.

3. CROSS-CULTURAL COMMUNICATION TRAINING

It is very important for the Chinese engineers to learn about the local culture of the country where the project is to be executed. It is very likely for the Chinese engineer to work in cooperation with foreign engineers of multi-nationalities. The principle of cultural communication, local customs, and well-established common practice are conveyed to the Chinese engineers who are supposed to work overseas. Cross-culture courses are divided into several major regional culture such as European culture, American culture, Southeast Asian culture, African culture and middle-east culture. Case study on cross-cultural communication is addressed in the training class. If the Chinese engineers are prepared culturally, technically and English-skillfully before they are thrown into certain oversea project they can better adapt to foreign environment by avoiding misunderstanding, conflicts and disputes with foreign partners.

CONCLUSION

Careful analysis of Chinese engineer's needs and design of a customer-tailored English training is the task of English educator's important task. English education shall switch its focus on English training of Chinese engineers who, as the main players in international projects, are supposed to play an important role in implementation of "the Belt, the Road Initiative". Development of effective project-specific English training course syllabus and an intensive occupational English training is the most efficient way to improve Chinese Engineer's English and cross-cultural communication competence, which will greatly promote the Chinese engineer's status in international projects under the framework of the "the belt, the road" initiative.

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